

CHERPLAN

Enhancement of Cultural Heritage through Environmental Planning and Management



MANAGING CULTURAL HERITAGE SITES IN SOUTHEASTERN EUROPE

CHERPLAN

Enhancement of Cultural Heritage through Environmental
Planning and Management

**MANAGING CULTURAL HERITAGE SITES
IN SOUTHEASTERN EUROPE**

Editors:

Janez Nared

Nika Razpotnik Visković



LJUBLJANA 2014

MANAGING CULTURAL HERITAGE SITES IN SOUTHEASTERN EUROPE

Publication of the project CHERPLAN (Enhancement of Cultural Heritage through Environmental Planning and Management).
<http://www.cherplan.eu>

Published by: Geografski inštitut Antona Melika ZRC SAZU
Issued by: Založba ZRC
<http://zalozba.zrc-sazu.si>

Editors: Janez Nared, Nika Razpotnik Visković

Translations: DEKS d. o. o.
DTP: SYNCOMP d. o. o.
Printed by: Collegium Graphicum d. o. o.
Print run: 400 copies



This publication is a result of the CHERPLAN (Enhancement of Cultural Heritage through Environmental Planning and Management) project, which is partly financed by the European Regional Development Fund.

The content of this publication may be quoted, reprinted, or reproduced in whole or in part with exact citation of the publication and the CHERPLAN project.

This publication describes the findings of the CHERPLAN project. It does not necessarily reflect the official positions of the participating administrations or the European Commission.

Digitalna verzija (pdf) je pod pogoji licence <https://creativecommons.org/licenses/by-nc-nd/4.0/>
prosto dostopna: <https://doi.org/10.3986/9789610503675>

CIP – Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

719(4-12)(082)

MANAGING cultural heritage sites in Southeastern Europe / editors
Janez Nared, Nika Razpotnik Visković ; [translations DEKS]. – Ljubljana :
Založba ZRC, 2014

ISBN 978-961-254-707-3
1. Nared, Janez
274399232

In memory of Bojan Erhartič.

LIST OF CONTRIBUTORS:

Autonomous Region of Friuli Venezia Giulia (Italy)

National Research Council, Institute of Environmental Geology and Geoengineering (Italy)

University of Natural Resources and Life Sciences, Institute of Sanitary Engineering and Water Pollution Control (Austria)

Municipality of Hallstatt (Austria)

Region of Western Greece (Greece)

Computer Technology Institute & Press (Greece)

Scientific Research Center of the Slovenian Academy of Science and Arts, Anton Melik Geographical Institute (Slovenia)

Municipality of Idrija (Slovenia)

Ministry of Culture (Former Yugoslav Republic of Macedonia)

Ministry of Culture (Montenegro)

Ministry of Culture, Tourism, Youth, and Sports (Albania)

CONTENTS

1	Introduction	9
2	In Search of Sustainable Management of Cultural Heritage Sites in Southeast Europe	10
2.1	Territorial Delimitation: Southeast Europe Program Area	11
2.2	Terminology	11
3	International Heritage Protection	14
3.1	UNESCO Protection and Development Guidelines	15
3.2	Operational Guidelines for Implementing the World Heritage Convention	17
4	Cultural Heritage: The Driver of Development	19
4.1	The Development Potential of Cultural Heritage	19
4.1.1	Economic Development Potentials	19
4.1.2	Social Development Potentials	21
4.1.3	Environmental Development Potentials	21
4.1.4	Cultural Development Potentials	22
5	Environmental Planning Recommendations	23
5.1	Preparing an Environmental Management Plan	23
5.2	Participatory Planning	28
5.3	Leading a Participatory Process	32
5.4	Water-Supply Challenges at Cultural Heritage Sites	37
5.5	Wastewater Management	41
5.6	Solid Waste Management in the Context of Cultural Heritage	44
5.7	Integrated Conservation of Cultural Heritage	49
5.8	Revitalization of Old City Centers	53
5.9	Restoration of Historic Buildings	57
5.10	Sustainable Management of Cultural Landscapes	60
5.11	Cultural Heritage as a Brand	64
5.12	Cultural Heritage and Natural Disaster Risk Preparedness	69
5.13	The Use of Geoinformatics in Cultural Heritage Management	76
5.14	Sustainable Transport and Cultural Heritage	82
5.15	The Role of Social Entrepreneurship in Revitalizing Cultural Heritage	86
5.16	Public-Private Partnerships in Cultural Heritage Protection	89
5.17	Marketing Cultural Heritage	93
5.18	Carrying Capacity	97
5.19	Developing Responsible Tourism in the Countryside Using Local Culture and Cultural Heritage	102
5.20	Monitoring and Evaluation in Managing Cultural Heritage	105
6	Sources	112

1 INTRODUCTION

(Janez Nared, Nika Razpotnik Visković)

In line with UNESCO requirements (cf. Convention ... 1972 and Operational Guidelines ... 2013), cultural heritage that has been included on the world heritage list must have a suitable management plan that comprehensively defines the goals and measures for protecting, preserving, using, and developing protected monuments and areas. In this regard, one cannot ignore the spatial, economic, and social context of cultural heritage, which is why management plans must also ensure the goals and measures relevant to the development of entire area and community in addition to providing protection (Ringbeck 2008). Management plans must be closely connected with regional planning and development documents, especially if they seek to follow sustainable development, which has been at the center of international attention ever since the 1972 adoption of the Convention on the Protection of World Cultural and Natural Heritage (Operational Guidelines ... 2013; Nared, Erhartič, & Razpotnik Visković 2013, 395).

Alongside ensuring environmental and cultural sustainability, cultural heritage can be used in various ways that can contribute to quality of life in individual communities; here it must be ensured that measures do not reduce the outstanding universal values of a specific protected monument. It does not suffice for an individual cultural heritage site to be protected (i.e., prevented from deteriorating); it is vital that this protection be complemented by components of education, identification, tourism, and development (Nared, Erhartič, & Razpotnik Visković 2013, 395).

Cultural values are an important component of regional development. Hence, their protection and development must be closely connected with planning and developing the entire region. According to the recommendations set out in the convention (1972), heritage should be included in community life. This manual therefore provides guidelines on how to address specific challenges of cultural heritage and its management and draws attention to some of the opportunities that heritage offers to the region's development (Nared, Erhartič, & Razpotnik Visković 2013, 395).

The CHERPLAN project (CHERPLAN stands for »Enhancement of Cultural Heritage through Environmental Planning and Management«) aims to provide a strong basis for ensuring compatibility and synergy between cultural heritage conservation and socioeconomic growth by fostering the adoption of a modern environmental planning approach throughout southeast Europe (SEE). The aim of environmental planning is to integrate traditional urban/spatial planning with the concerns of environmentalism to ensure sustainable development; when innovatively applied to cultural heritage sites, environmental planning's comprehensive perspective can be regarded as composed of three spheres: the built and historical environment, the socioeconomic and cultural environment, and the biophysical environment (Application form 2010).

In this regard, this publication, as one of the results of the CHERPLAN project, addresses vital parts of cultural heritage management. It provides the basic framework defined by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the International Council on Monuments and Sites (ICOMOS), and guidelines for twenty specific management issues composed of a thematic introduction, recommendations, and good-practice examples. Thus, the publication provides practical information on the application of environmental planning in SEE, some of it developed within CHERPLAN pilot projects and some of it defined through the experiences of other cultural heritage sites. In both cases, recommendations and good-practice examples present local traditional knowledge and experience that has been developed through successful management practices in the past.

The publication aims to assist cultural heritage site managers in their everyday decisions by supporting them with firm technical knowledge and specific instructions on how to react in a given situation. In this regard, it could support the recently issued *World Heritage Resource Manual on Managing Cultural World Heritage*, which was published by UNESCO in November 2013.

2 IN SEARCH OF SUSTAINABLE MANAGEMENT OF CULTURAL HERITAGE SITES IN SOUTHEAST EUROPE

(Janez Nared, Bojan Erhartič, Drago Kladnik)

The Southeast Europe Transnational Cooperation Program has highlighted the development of transnational synergies for sustainable growth areas (Priority Axis 4), in which the use of cultural values plays an important role for sustainable development of regions (Programme Priorities 2014).

The purpose of the »Area of Intervention 4.3« – Promoting the use of cultural values for development – »is the inclusion of cultural values as an integral part of the programme area in the planning and development processes of urban centres, systems of settlements and surrounding rural areas« (*South East Europe Programme Manual 2010*, 97). Namely, southeast Europe »is rich in cultural values (from prehistoric times and beyond to the ancient Greek civilization, Hellenistic times, the Roman and Byzantine Empires, the Ottoman Empire, Habsburg Monarchy and Communist period) and tourism potential. Urban development cannot take place in a 'cultural vacuum' but should respect the cultural landscapes in which it is embedded. Hence the mobilisation of cultural values in the urban development context presents an opportunity for promoting local identities, bridging urban centres and rural periphery and making South East European cities an attractive place to live and work« (*South East Europe Programme Manual 2010*, 97).

To this end, the projects financed by the program should support joint conservation and the utilization of cultural values as an endogenous development factor and a resource for sustainable tourism (*South East Europe Programme Manual 2010*, 97).

One of the selected projects in the area of intervention was also the CHERPLAN project, which focuses on integrated planning of cultural heritage sites and emphasizes environmental planning as the fundamental conceptual framework for achieving this goal. The project partners from Italy, Slovenia, Austria, Montenegro, Albania, Former Yugoslav Republic of Macedonia, and Greece formulated four interconnected work packages (WP) in order to attain the goals of this three-year project:

WP 3: Analysis of Cultural Heritage Sites;

WP 4: Environmental Planning Concept;

WP 5: Environmental Planning in Pilot Projects; and

WP 6: Cultural Heritage Environmental Planning Model for SEE.

This publication, developed in WP 6, compiles the results of WPs 3, 4, and 5, and gives particular emphasis to cultural heritage sites' revitalization, environmental planning, specific good-practice examples, and recommendations to support decision-makers in sustainable planning and cultural heritage site management.

CHERPLAN: Enhancement of Cultural Heritage through Environmental Planning and Management

The CHERPLAN project aims to provide a strong basis for ensuring compatibility and synergy between cultural heritage conservation and socioeconomic growth by fostering the adoption of a modern environmental planning approach throughout southeast Europe. Following a common methodology, partners from seven countries (Albania, Austria, Greece, Italy, Former Yugoslav Republic of Macedonia, Montenegro, and Slovenia) have prepared action plans, business plans, management plans, and environmental plans to promote efficient participatory management of the cultural heritage sites in their countries.

Project Partnership:

- Autonomous Region of Friuli Venezia Giulia, Italy (Lead Partner);
- National Research Council, Institute of Environmental Geology and Geoen지니어ing, Italy;

- University of Natural Resources and Life Sciences, Institute of Sanitary Engineering and Water Pollution Control, Austria;
- Municipality of Hallstatt, Austria;
- Region of Western Greece, Greece;
- Computer Technology Institute & Press, Greece;
- Scientific Research Center of the Slovenian Academy of Sciences and Arts, Slovenia;
- Municipality of Idrija, Slovenia;
- Ministry of Culture, Former Yugoslav Republic of Macedonia;
- Ministry of Culture, Montenegro;
- Ministry of Culture, Tourism, Youth, and Sports, Albania.

Observers:

- UNESCO Regional Bureau for Science and Culture in Europe, Italy;
- Federal Ministry for Education, the Arts, and Culture, Austria.

More information can be found at www.cherplan.eu.

2.1 TERRITORIAL DELIMITATION: SOUTHEAST EUROPE PROGRAM AREA

As one of the thirteen European transnational cooperation programs, the Southeast Europe program is an instrument that the European Commission approved on 20 December 2007 to promote connections and increase competitiveness between territorially extremely diverse regions as part of the European Territorial Cooperation Objective. Its main goal is to support projects along the development axes of innovation, environment, accessibility, and sustainable growth regions, and to improve connections with the non-EU members in these areas (Internet 1).

The Southeast Europe program includes sixteen countries, of which nine are EU member states, six are EU candidates or potential EU candidate countries, two are included in the European Neighborhood Policy, and Kosovo as the seventeenth country is still being formally treated as part of Serbia. Fourteen countries are included in the program as a whole, whereas in Italy only the regions of Friuli–Venezia Giulia, Veneto, Trentino–Alto Adige (South Tyrol), Lombardy, Emilia–Romagna, Marche, Umbria, Abruzzo, Molise, Apulia, and Basilicata are included, accounting for 49.2% of the country and its population; in Ukraine, only the provinces of Odesa, Chernihiv, Ivano-Frankivsk, and Zakarpattia are included, accounting for 13.1% of the total area of the country and 11.3% of its population. The program's administrative seat is in Budapest.

Only nine countries (Albania, Bulgaria, Bosnia and Herzegovina, Montenegro, Greece, Croatia, Kosovo, Former Yugoslav Republic of Macedonia, and Serbia) are located in southeast Europe.

The project thus focuses on the area covered in the program and not on the geographical region of southeast Europe.

2.2 TERMINOLOGY

Until the end of the twentieth century, the terms »cultural heritage protection« and »restoration« were generally used for all works relating to cultural heritage, but today many other more specific terms are also used in connection with the management of cultural heritage sites (Internet 2; Pirkovič 2012; Zakon ... 1999–2008):

- **Conservation** is the broadest term used. It combines all types of policies, strategies, and legal, administrative, and technical measures and activities connected with heritage.



Figure 1: Area of the Southeast Europe Transnational Cooperation Program.

- **Protection** is a subordinate term, referring to the activity performed by specialized bodies and organizations at the national level; it thus mainly entails legal mechanisms, and administrative and professional activities.
- **Preservation** refers to specific measures and actions for preventing unwanted changes and deterioration of heritage.
- **Heritage conservation** is a discipline belonging to the field of culture and partly nature protection that seeks to preserve elements of special importance (cultural heritage) and include them in contemporary life. In the narrow sense, this is a profession that prevents the deterioration of heritage and improves its physical condition.
- **Conservation of historic cities and urban areas** refers to measures that are vital for protecting, preserving, and restoring cities and urban areas, and for their further development and harmonious adaptation to modern life (Charter for Conservation ... 1987).
- Probably the broadest and most general definition of **heritage** is that this is something that people inherited from their predecessors and leave to their descendants. Heritage can be roughly divided into natural and cultural heritage. Cultural heritage is divided into tangible and intangible heritage, and tangible heritage is further divided into movable and immovable heritage (Šmid Hribar 2014). The term cultural heritage refers to »all manmade structures, and parts of cultural landscapes – that

is, landscapes in which manmade landscape features dominate over the natural ones – that have special aesthetic, historical, cultural, scientific, or educational value for the country or a smaller area« (*Geografski terminološki slovar* 2005, 194). Cultural heritage is active rather than passive. It is created based on experiences and is therefore something that one cannot learn easily. This means it is both a group phenomenon and a result of people's knowledge, which arises from the thought processes in the brain (Bogataj 1992; Goluža & Geršič 2014).

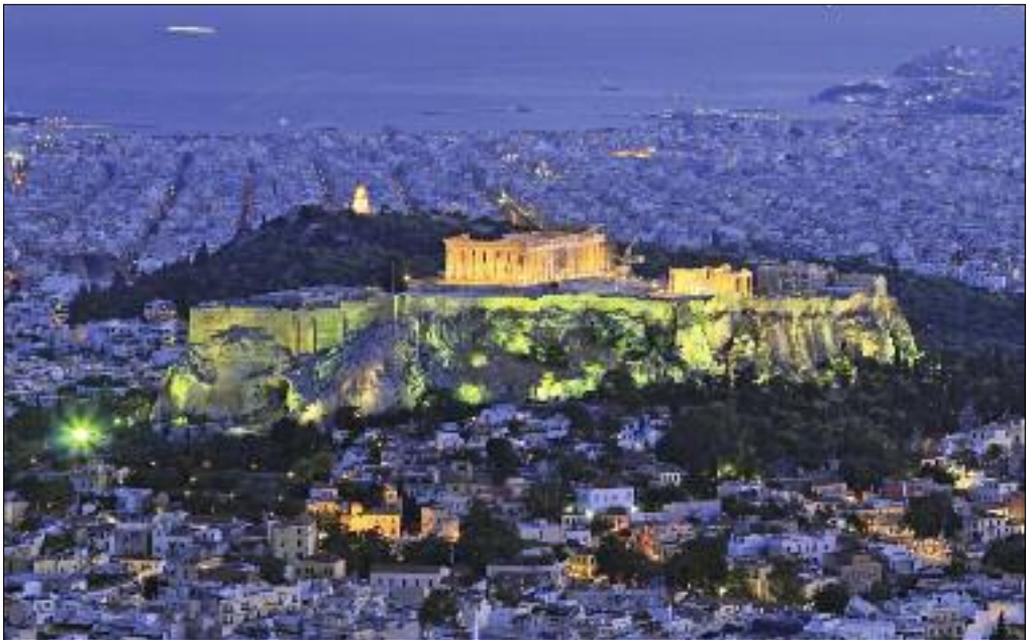
The term **value** has recently been increasingly used in addition to the term »heritage.« The key concept of heritage is »legacy« or inheritance and receiving from predecessors, whereas the concept of »value« focuses on determining, identifying, and assessing value, which is basically about the relations between a group or individual and the cultural element that may become a value (Šmid Hribar & Ledinek Lozej 2013, Šmid Hribar & Lapuh 2014).

3 INTERNATIONAL HERITAGE PROTECTION

(Bojan Erhartič, Maruša Goluža)

In recent decades, changes have occurred in international documents and national (especially EU) regulations on heritage protection regarding the approach to the object of protection and the understanding of why and how heritage should be conserved. Previously, protection focused on individual structures and groups of structures with notable heritage features and symbolic values from the viewpoint of national identity, but then professionals also started focusing on protecting structures with less notable heritage features and, especially in recent times, on larger areas. The main task of conservators in architectural heritage was to preserve physical structures (conservation) and renovate them (restoration), whereas now the focus is on preserving the essential heritage assets and at the same time contributing to the revival and long-term use of heritage, and indirectly to strengthening the social bonds at heritage sites and to their sustainable development (Pirkovič 2012).

The key difference between traditional and contemporary heritage protection thus lies in understanding whom this protection serves. The traditional view is primarily based on the belief that the goal of conservation is to physically protect individual cultural monuments from deterioration and changes caused by time and the modern lifestyle (Internet 3). Modern conceptualization increasingly surpasses the mere inclusion of individual monuments and takes into account larger spatial units and wider assets of the cultural environment with all aspects studied and a wide range of meanings. It can be defined as »dynamically directing changes« (Pirkovič 2012, 5) in order to reduce the extent of negative consequences. In development processes, the use of natural, cultural, and social resources must be carefully directed to prevent neglect, deterioration, excessive use, or destruction. The modern approach thus goes beyond the preservation of individual buildings and objects, and has a connective component, adding to the work of the basic disciplines (i.e., archaeology, architecture, ethnology, geography, landscape architecture, history, and art history; Internet 3).



BOJAN ERHARTIČ

Figure 2: The Acropolis was added to the World Heritage List in 1987.

One of the first and most important international documents on cultural heritage was the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage. This convention, which was ratified in 190 countries (Internet 4) by September 2012, introduced the well-known World Heritage List (Internet 5). The first version of the Operational Guidelines for the Implementation of the World Heritage Convention was issued that same year; it included recommendations on the required documentation and procedure for adding sites to the World Heritage List, supervision and rules of reporting on the state of heritage, and some other instructions connected with the convention's implementation (Operational Guidelines ... 2013). Because the views on cultural heritage and its conservation constantly change, the Operational Guidelines also continue to change. The latest version, which includes new concepts, expertise, experiences, and views on world heritage, was adopted in 2013.

Only sites with outstanding universal value, integrity, and authenticity can be added to the World Heritage List. According to the Operational Guidelines for the Implementation of the World Heritage Convention, outstanding universal value means »cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity« (Operational Guidelines ... 2013, Article 49). In addition to increasing their international profile, entering a site onto the World Heritage List also demands that countries properly manage this heritage. UNESCO expects the countries to regularly monitor the state of their heritage, maintain it, and, when possible, even improve it. Regardless of being a UNESCO member, ratifying the Convention Concerning the Protection of the World Cultural and Natural Heritage, or being entered onto the World Heritage List, protecting cultural heritage is solely the responsibility of individual countries. They must provide the conditions that enable long-term conservation of cultural heritage. They must introduce and implement effective legislation, establish relevant institutions responsible for cultural heritage, and ensure effective management of cultural heritage sites. UNESCO highlights the fact that all administrative levels, from the national to the local level, the local population, and other stakeholders, should take part in cultural heritage conservation (Operational Guidelines ... 2013).

3.1 UNESCO PROTECTION AND DEVELOPMENT GUIDELINES

The protection and preservation of world heritage is the responsibility of the manager and must be congruent with the UNESCO guidelines in order to preserve a given region's outstanding universal value, including its integrity and authenticity. A world heritage manager must also provide a suitable legal, institutional, and administrative basis for preserving heritage (Nared, Erhartič, & Razpotnik Visković 2013, 396).

Effective management depends strongly on the type, characteristics, and needs of the world heritage site. The purpose of the management plan is to provide successful world heritage protection for present and future generations. It is vital that the plan include local practices and regional planning concepts already in place (Nared, Erhartič, & Razpotnik Visković 2013, 396).

The general guidelines for effective management and a management plan can be summarized in three concepts (Operational Guidelines ... 2013):

- Basic understanding of the world heritage site by all interested parties; cooperation between partners and stakeholders;
- A clear system of planning, implementing, and monitoring the condition of the world heritage site, evaluation, and feedback; effective monitoring of changes and proposed actions;
- Securing necessary funds (Nared, Erhartič, & Razpotnik Visković 2013, 396).

The International Council on Monuments and Sites (ICOMOS), a nongovernmental UNESCO advisory body, is in charge of preserving cultural monuments and sites. Its basic task is to evaluate and prepare information regarding cultural and mixed/integral world heritage, provide advice for preserving and renovating monuments, and monitor the condition of cultural world heritage. The guidelines for preserving heritage are set out in a number of conventions and charters such as:

- The Athens Charter for the Restoration of Historic Monuments (1931);

- The International Charter for the Conservation and Restoration of Monuments and Sites (1964);
- The Charter for the Conservation of Historic Towns and Urban Areas (1987);
- The Charter on the Principles for the Analysis, Conservation, and Structural Restoration of Architectural Heritage (2003); and
- The Convention for the Safeguarding of Intangible Cultural Heritage (2003).

UNESCO recommendations are not legally binding for the member states, but they are nonetheless expected to follow them. With regard to cultural heritage conservation, the recommendations refer primarily to two documents: the 1972 Recommendation Concerning the Protection, at National Level, of the Cultural and Natural Heritage, which deals with heritage from a more general perspective, and the 2011 Recommendation on the Historic Urban Landscape, including a glossary of definitions, which deals primarily with urban heritage. The content of both documents can be summed up in the following groups of recommendations:

- ***Education and Technical Measures***

Member states must provide the opportunities for development and education to the staff that will deal with cultural heritage protection, and promote their cooperation with various disciplines (e.g., architecture and spatial planning). It is also important that they develop techniques that ensure the long-term protection of cultural heritage authenticity. UNESCO advocates regular maintenance, which is usually cheaper than the major repairs that the member states would have to carry out if they simply left their heritage to decay. Member states must use various measures to protect heritage against external impacts, such as traffic tremors (they should suitably adapt their traffic policies in cultural heritage sites).

- ***Administrative Measures***

Solid knowledge of cultural heritage forms the basis for successful management of heritage sites. Member states should have a complete overview of heritage and structures that are inseparably connected with it. They should regularly update the data and preferably use geographic information systems. Plans for protecting, safeguarding, presenting, and reviving cultural heritage structures and its surroundings should be part of short- and long-term urban planning or national spatial plans. In these documents, the member states should also define which buildings should be protected under which conditions and find a new, more suitable use for structures that no longer serve their purpose. UNESCO also recommends establishing an advisory body to provide advice to NGOs and owners of cultural heritage sites on how to use these sites.

- ***Legal Measures***

Member states should provide a suitable legal framework to support cultural heritage conservation, such as a ban on new construction, demolition, renovation, and any changes in the immediate vicinity of a protected site that might affect the appearance of heritage, restrictions on advertisements and various infrastructure, and so on. These measures should be carried out irrespective of any ownership changes. Member states should also impose penalties for disregarding the regulations.

- ***Financial Measures***

National and local authorities should allocate funds for maintaining and conserving cultural heritage, as well as for innovative projects that promote the development of cultural heritage in a traditional but economical way. UNESCO also supports the inclusion of private investors in development and conservation projects.

- ***International Cooperation***

UNESCO encourages member states to cooperate, exchange experience and information, and work together on shared projects involving cultural heritage conservation.



BOJAN ERHARTIČ

Figure 3: Idrija, Slovenia. Heritage of Mercury. Almadén and Idrija is a serial property, connecting Spain and Slovenia.

3.2 OPERATIONAL GUIDELINES FOR IMPLEMENTING THE WORLD HERITAGE CONVENTION

The Operational Guidelines for the Implementation of the World Heritage Convention encourage member states to implement the convention. They can roughly be divided into four thematic sections:

- Entering properties onto the World Heritage List;
- Protection and conservation of cultural heritage;
- International assistance under the World Heritage Fund; and
- Mobilizing support for the convention.

The first step in the procedure for adding heritage to the World Heritage List is compiling a Tentative List. Member states work with various stakeholders to identify the cultural heritage they believe is suitable for entering onto the World Heritage List. Based on the Tentative List, the criteria set out in the Operational Guidelines, and the required documentation, UNESCO decides once a year which properties to add to the official World Heritage List (Operational Guidelines ... 2013).

A solid knowledge of cultural heritage is vital for all further conservation and other measures. In addition to assessing the state of conservation, UNESCO emphasizes the importance of studies for determining the number of visitors a heritage site can accept and what type of heritage use is still acceptable and does not cause irreparable damage to or loss of the site's universal value. Only based on these analyses can member states establish a suitable conservation regime and prescribe limitations. For the cultural heritage sites included on the World Heritage List, UNESCO also requires drawing up a management plan that specifies how the outstanding universal value of the heritage will be conserved. UNESCO also places special emphasis on the participatory approach and the principle of sustainability (Operational Guidelines ... 2013).

After entry onto the World Heritage List, member states must inform UNESCO of any planned changes to heritage (restoration, new construction, and so on) that might threaten its outstanding universal value. Member states must inform UNESCO of their intentions before they start preparing the project documentation and making decisions that can no longer be cancelled later on. UNESCO helps find the most appropriate solutions and thus contributes to suitable heritage conservation. If cultural heritage is under threat, UNESCO carries out the Reactive Monitoring procedure by itself and based on the established conditions decides whether only specific measures are required to still preserve the heritage and temporarily add it to the List of World Heritage in Danger or, in extreme cases, to remove it from the World Heritage List (Operational Guidelines ... 2013).

If the member state is unable to provide sufficient funding for the conservation and management of cultural heritage that is already included on the World Heritage List or is nominated for the list, UNESCO provides international assistance from a special fund. A fund for this purpose was established under the 1972 convention and is maintained through compulsory and voluntary contributions by the signatory states. In allocating international assistance, priority is given to properties included on the List of World Heritage in Danger (Operational Guidelines ... 2013).

By ratifying the convention, member states must also establish suitable conditions that make it possible to implement the convention's provisions. Among other things, UNESCO's objectives request that the countries (Operational Guidelines ... 2013):

- Strengthen the role of institutions and research activities in cultural heritage protection;
- Strengthen the role of cultural heritage in the life of the community;
- Spread knowledge and raise awareness of the importance of cultural heritage; and
- Include as many stakeholders as possible in cultural heritage protection.

4 CULTURAL HERITAGE: THE DRIVER OF DEVELOPMENT

(Lucija Lapuh, Mateja Šmid Hribar)

Culture, cultural values, and cultural heritage are important drivers of development. They represent a potentially valuable asset for tourism; values can enhance creativity or contribute to creative milieus, and cultural heritage can also be an important part of regional identity and image. They can be used in various ways that contribute to the quality of life in individual communities. Although protection is an especially important issue in cultural heritage, this should be complemented by education, identification, tourism, and development. Protection of cultural assets and development should be closely connected with planning and developing the entire region. Their economic potential can be reflected in increased tourism flows and resulting multiplier effects. In addition, great potential can also be found in marketing the entire region. However, as some case studies have also shown, positive social effects on local communities such as intergenerational dialogue and increased social cohesion are also important. The greatest challenge of involving culture as a source of regional development is finding the delicate balance between its protection and economic/social use (Nared & Bole 2014).

The growing world population and modern lifestyle are increasing the pressure on city centers and consequently also increasingly threaten cultural heritage. UNESCO emphasizes that member states should include cultural heritage protection in spatial plans at all administrative levels, and that the inclusion of cultural heritage in the business and social environment should form the basis of regional development. As a counterbalance to contemporary lifestyle and development, cultural heritage protection should follow the wider concept of sustainable development, thus contributing to a higher quality of life in cities. In order to avoid any conflict of interest, UNESCO ascribes great significance to the participatory approach, in which the inclusion of local communities in decision-making processes is especially of key importance (Recommendation ... 1972; Recommendation ... 2011; Goluža & Erhartič 2014).

On the other hand, cultural heritage (e.g., cultural monuments) may simultaneously create some impediments to development in the sense of restrictions on planning or building, weak infrastructure, and so on (Nared & Bole 2014).

4.1 THE DEVELOPMENT POTENTIAL OF CULTURAL HERITAGE

If it is not connected with social values, economic activity, and international connections, and if it is not appropriately managed, cultural heritage hardly constitutes an advantage for an area's development (Cultural Heritage ... 2007). In contrast, when the management systematically combines the key factors, heritage can represent an important (economic, social, environmental, cultural, etc.) development potential.

4.1.1 ECONOMIC DEVELOPMENT POTENTIALS

Economic effects of cultural heritage conservation include new jobs and a resulting source of household income, heritage tourism, and the establishment of small enterprises. The local population participates in heritage conservation by providing their skills, in which it must receive training for carrying out specific jobs (e.g., for renovating cultural heritage and performing restoration work), and the use of raw materials from the local environment is common. The inclusion of local residents contributes to generating income, and often heritage can also lead to the revitalization of the area (Cultural Heritage ... 2001, Cultural Heritage ... 2007).

According to Du Cross (2001, 167), there is two-way relationship between the key elements of cultural heritage place and its tourism potential: its cultural integrity or robusticity on the one hand, and commercial factors connected with transforming a historical site into a cultural tourism site on the other. The main goal of planning for sustainable cultural heritage tourism is to identify cultural heritage sites



BOJAN ERHARTIČ

Figure 4: Museums are an important part of tourism. Mycenae, Greece.

and their potentials for tourism development, and to manage them to ensure sustainability, through which tourism can also contribute to heritage conservation.

The link between culture and tourism can be best seen from the viewpoint of the participation of culture in the local environment. Thirty-seven percent of world tourism has a cultural component. Because heritage tourists stay in a place longer than others, cultural heritage has a positive effect on jobs and promotes activities connected with hotel accommodation, transport, restaurants, souvenir production, guided tours, and so on (Cultural Heritage ... 2007). Thanks to cultural tourism, local residents can be even prouder of their local history, and it also improves the local economy and subsequently the quality of life. Museums, heritage sites, and cultural events must be receptive to new entrepreneurial approaches; the better the tourism product, the greater the likelihood that tourists will stay longer and spend more money in a place (Silberberg 1994).

According to the International Cultural Tourism Charter adopted in 1999, tourism is a positive force for natural and cultural heritage conservation that can capture the economic characteristics of the heritage and harness them for conservation by generating funding, educating the community, and influencing marketing policy. Because it can be an important development factor, it is also a component part of many national and regional economies (Goluža & Erhartič 2014).

Excessive or poorly managed tourism and tourism-related development can cause permanent damage to heritage and threaten its integrity and basic characteristics. The ecological balance, culture, and local lifestyles may also be degraded along with the visitor's experience of the place (International Cultural Tourism Charter 1999; Goluža & Erhartič 2014).

The cooperation of local community representatives, conservationists, tourism operators, property owners, policymakers, those preparing national development plans, and site managers is necessary in order to achieve a sustainable tourism industry and enhance the protection of heritage resources for future generations (International Cultural Tourism Charter 1999; Goluža & Erhartič 2014).

4.1.2 SOCIAL DEVELOPMENT POTENTIALS

Cultural heritage enhances the identity of a place and is therefore even more important during the time of globalization. The historical value and identity play a much greater role in its conservation than the physical renovation of structures because the local tourism stakeholders, the production of publications, and the organization of activities (e.g., exhibitions, fairs, and musical events) connected with cultural heritage help promote the place (Cultural Heritage ... 2007). In the time of globalization, stronger local identity is an advantage to society. In this context, the following thought is very informative: »If we all are to build a good global village, we need first to know well the village we are coming from« (Sarbib 2000, cited in Cultural Heritage ... 2001). It emphasizes the importance of an individual's identity that is shaped in a family environment or home town.

Among the social development potentials of cultural heritage, its educational role is also important. For example, using old skills can significantly contribute to raising the awareness of sustainable living in a specific region, and understanding past achievements, especially technical achievements that have been preserved as heritage (e.g., the Idrija logging sluices and water-driven pump, Slovenia), can stimulate the development of new expertise. Based on the example of handicraft heritage in the Mura Region, Vokić (2009) establishes that this heritage must be promoted systematically in primary and secondary schools, preschools, occupational activity centers, adult education centers, and other informal educational associations and organizations. This can help increase interest in handicrafts and decorative arts training.

Culinary heritage is also very interesting. At the local level, it is represented by food, the promotion of local farm products, and cookbooks on local specialties (Bessiere 1998). This type of heritage can also be a source of local initiatives and an element of tourism development, and can help build local identity (Bessiere 1998).

Ultimately, cultural and especially intangible cultural heritage can facilitate the social integration of vulnerable groups (e.g., younger or older generations, women, the disabled, the uneducated, and the unemployed), intergenerational dialogue, and transfer of knowledge and skills. This is especially true in the rural environment, where adults pass knowledge to their children through their everyday work, and precisely through this remain actively included in society (Makarovič 1994).

4.1.3 ENVIRONMENTAL DEVELOPMENT POTENTIALS

Many abandoned industrial sites, which are often the source of environmental problems, are declared and protected as historical heritage. Mining areas constitute a special type of industrial sites that include not only architectural elements, but also landscape elements related to geology. Taking into account various modern cultural aspects and related potentials, the need to economically revitalize these traditionally mono-industrial sites (e.g., mining sites) has resulted in their cultural revival, in which the new function of these sites has a smaller impact on the environment (Conesa, Schulin, & Nowack 2008).

Environmental development potential mainly refers to traditional practices (intangible heritage) connected with the cultural landscape (immovable heritage), such as (1) the conservation of ecosystems (e.g., mowing daffodil meadows), (2) maintaining the complexity and stability of ecosystems (e.g., sustainable management that contributes to the conservation of cultural landscapes), (3) supporting local organic food production (e.g., markets with locally produced food, social entrepreneurship in the countryside), (4) erosion prevention (e.g., sustainable forest management), and so on (Ledinek Lozej, Šmid Hribar, & Bole 2012).

Environmental aspects are important also in urban cultural heritage sites, where proper environmental infrastructure is of crucial importance for maintenance of buildings and provision of basic infrastructure for living. Therefore, implementation of environmental planning solutions to cultural heritage sites could foster urban renewal that makes protected buildings suitable for contemporary living standards.

4.1.4 CULTURAL DEVELOPMENT POTENTIALS

These are among the least studied development potentials, even though they are vital for the development of an individual heritage site as such. They refer to the development of culture in the broadest sense and involve cultural heritage units that (1) inspire and encourage artistic expression (e.g., using lace in modern design and art), (2) enable active participation, and provide personal experience and satisfaction (e.g., choir singing, learning special culinary features), (3) enable personal identification (e.g., renovating and maintaining a farm that is passed down from one generation to the next), and so on (Ledinek Lozej, Šmid Hribar, & Bole 2012). These potentials usually do not have a direct economic impact in their environment, but they nonetheless influence individuals' creative skills and thus indirectly substantially enrich society as a whole.

5 ENVIRONMENTAL PLANNING RECOMMENDATIONS

5.1 PREPARING AN ENVIRONMENTAL MANAGEMENT PLAN

(Sandra Nicolics, Laurent Richard, Helmut Jung, Reinhard Perfler)

Finding solutions for appropriate management of cultural heritage sites is a frequently expressed need in recent discussions concerning cultural heritage preservation. Consequences of mismanagement are often severe and not only put valuable heritage at risk of unrecoverable deterioration, but also seriously jeopardize the socioeconomic development of the associated communities. Mass tourism, uncontrolled construction activities, and insufficient maintenance can reduce the beauty and attractiveness of heritage sites but also result in decreased living quality for inhabitants as often being coupled with crowding of public places and high living costs due to inappropriate infrastructure. In addition, cultural heritage management focusing exclusively on heritage protection can have negative effects by restricting any form of community development. Many communities with cultural heritage sites are facing severe problems such as lowered amenity values, economic decline, and emigration.

Approaches are needed that acknowledge the unique value of cultural heritage, but also make use of corresponding opportunities and consider the sites as assets. »Cultural planning,« the integration of cultural history and spatial planning, is a prominent approach targeting the compatibility of modern (urban) life and cultural preservation (which has also been emphasized in the European Landscape Convention; Daisi 2005; European Landscape Convention 2000). However, cultural heritage needs to be considered as a vital living environment for both visitors and inhabitants and has to be treated as such. When considering the aspect of intangible heritage in particular, management and the need for integration require holistic integrated approaches for successfully merging heritage management with prospective sustainable community development. Based on a participatory approach, concerns of environmentalism should be integrated into traditional cultural heritage management targeting sustainable development of the associated communities as well as their environment.

From a very general perspective, planning in relation to the environment is concerned with the regulation of resource use. This task is closely connected to the idea of targeting sustainable development of the Earth's resources: »the kind of development that meets the needs of the present without compromising the ability of future generations to meet their own needs« (Brundtland et al. 1987). However, what exactly can be understood as environment is open to discussion: starting from the idea of considering only air, water, soil, and rock resources at or close to the Earth's surface, to concepts considering the Earth's deep interior up to the upper atmosphere and beyond (Selman 2000). Human users of resources together with their economic systems and ethical values driving and restraining resource usage may also be an important aspect to be considered. This is especially relevant when referring to the three dimensions of sustainability as proposed by Brundtland et al.: social development, economic development, and environmental protection. Thus, following Selman for achieving a holistic view of the environment, three spheres have to be considered:

- The bio-physical environment: air, minerals, soil, and water;
- The socioeconomic environment: cultural activities, heritage, and economic activities;
- The built environment: water supply, sanitation, safety, warmth, stability, light, waste disposal, and architectural aesthetics.

In this context, environmental planning is therefore understood as a political process associated with building up regulatory frameworks for sustainable resource use, mainly being carried out by public organizations on the behalf of citizens.

From a more practical perspective, environmental planning can be referred to as an activity aiming to support businesses or communities in tackling environmental issues or complying with environmental regulations. Therefore, »green products« or »green washing« – the use of environmentally responsible activity (e.g., in product manufacturing, community development, etc.) as a provision for a profitable

market niche or as proof of »corporate citizenship« – has started to play a more profound role (Environmental Planning ... 1994).

Definition of a problem (as a starting point of a planning process) – and planning in the later phase – should ideally not be done by the decision-maker himself, or a single analyst, but also involve stakeholders. Public participation is a key aspect of environmental planning. Provided public participation is carried out successfully, it can improve the quality and legitimacy of decisions. From a scientific perspective, public participation can have the positive effect of limiting problems with uncertainty and unavailability of data or also identifying »limits of knowledge.« From the perspective of participating stakeholders, a potential benefit of integrating science into decision-making processes is to cover the greatest possible range of views, values, and interests, and to not exclude information actually necessary for understanding the complexity of the situation. Understanding the situation enhances the capacity of stakeholders to actively get involved in a (political) process and achieve better results in terms of environmental quality and other social objectives, and it also improves the ability to actually implement actions (Dietz & Stern 2008).

Considering CHERPLAN's objective to integrate cultural heritage management with environmental planning, principles of cultural site management are linked with those of environmental planning. The environmental planning model thus contains a set of measures ensuring a systemic and participative approach in order to visualize:

- A planning system: the content, objective, dimension, and boundary of a planning process;
- Its components: stakeholders, institutions, economic, cultural, and natural resources, their current status, and expected developments;
- Relationship of the system components: dependencies and interactions between different components, relevant activities, and their expected impacts on all system components.

The proposed planning concept aims to support cultural heritage site communities in:

- Systematically addressing key problems arising from contradicting goals of stakeholders and actors using participatory methods;
- Formulating ideas for actions for community development while considering the needs of cultural heritage preservation as well as those of modern urban infrastructure and services;
- Developing and using environmental management plans as a planning framework.

5.1.1 RECOMMENDATIONS

For preparing an integrated environmental management plan, the following steps are proposed. These steps take into account key principles of the Soft System Methodology (SSM) as presented by Checkland and Poulter (2006) and combine them with »hard facts« relevant for infrastructure and local economy planning:

Defining Environmental Planning and Management Coordination

The starting point of the planning process is to define who will coordinate and drive the planning and management process for the cultural heritage site. In this chapter, this role is referred to as environmental planning and management coordination. Undeniably, the environmental planning model coordination should be legitimated and have sufficient resources and capacity to carry out its duties requiring accurate institutional and financial embedding of the planning process. Here, the analysis of the regulatory framework and existing planning instruments can provide useful information for efficiently embedding or interlinking the functions of environmental planning model coordination with existing institutions/authorities (e.g., for community/regional planning and heritage management). Strengths, gaps, and weaknesses in the available institutional environment have to be observed and critically discussed. Moreover, capacity and resources/funding of the appointed person/consortium, including the form of organization and proposal for sources and mechanisms of funding, have to be ensured.

The Regional System and Problem Analysis

This phase of the planning process is all about comprehensively characterizing the status quo of the community and its site to build the basis for working out development scenarios. This involves collecting general information on the site as well as investigating the situation's perception from point of view of various local/regional stakeholders. Stakeholders are considered relevant if they are expected to be positively or negatively affected by the outcomes of the planning process, able to support/delay the process, or provide information/expertise relevant for the planning process. It is the task of environmental planning model coordination to map out the variety of sectors and levels involved and to select and invite representatives for preparing particular inputs for the planning steps. Therefore, to start with, it is essential to carefully collect general information on the site itself (especially its cultural heritage assets), the natural and built environment, the community affected, the current heritage legislation, and the regulatory framework/instruments for community development. Embedding the planning process in the available regulatory and institutional framework is critical for making use of available channels but also for avoiding duplication of efforts. Thus, considering the ultimate goal of this planning approach, the linkage with local, regional, and national development instruments/master plans, which are usually the legal basis for territorial planning and development, seems most appropriate.

In addition to the theoretical study of the site, main entities, structures and viewpoints of the situation, ongoing processes, and current recognized issues and any potential ones should be explored in close cooperation with local stakeholders. Ideally (e.g., in workshops), different viewpoints present in the system should be identified in order to recognize the variety of issues perceived by different stakeholders. This will help in identifying issues to be tackled and gives some orientation for the next planning steps.

Defining Visions and Scenarios

In the next step, visions and scenarios addressing selected issues should be developed in a collaborative approach. Ideally, in this process different stakeholders (or stakeholder groups) should be involved, whereas their input needs to be compiled in an organized and structured manner. This can be supported through the application of participatory methods such as Word Café, Charette, or Focus Groups on the one hand, as well as tools on the other hand that offer access to information relevant for the planning process (e.g., conventional planning instruments, GIS platforms, etc.). The main idea is to draw a clear distinction between different development options possible in the system as well as to think about relevant steps and players for each option (and the interdependencies between them).

Discussing and Prioritizing Fields of Action, Goals, and Results

Once several development options are formulated, a structured discussion of these options can help facilitate activity plans for implementation. The impacts of these options should be discussed and their appropriateness, feasibility, effectiveness, efficacy, and efficiency evaluated. Like the variety of stakeholders and interests present in the system, these options may turn out to be conflicting. The discussion process should ideally end up in an »accommodation« between the different parties – that is, finding options that all participants can live with. It is the main task of environmental planning model coordination to carefully initiate and facilitate this process and to identify which solutions are accepted well by a majority of actors. The involvement of external experts can be helpful for more clearly seeing the consequences, advantages, and disadvantages of the options and thus more easily prioritizing the ideas. Ultimately, the discussion should result in a selection of fields of action for a management plan for the community and its site. Each field of action should be specified in terms of the issue(s) addressed, expected results/impacts of respective activities, relevant stakeholders to be involved, and funding and resources available/required for implementation.

Towards Implementing Interventions

After having narrowed down the fields of actions, the implementation of corresponding measures can then be supported through actual action and business planning. Action planning deals with creating

a precise work plan for implementing a measure. It also names the institutions/stakeholders involved and defines their respective responsibilities. For a better idea of the time horizon for implementation, a distinction can be made between short-term, medium-term, and long-term activities. With business planning, financial aspects such as expected investment, operation, and maintenance costs as well as means for financing should be covered.

Implementing and Monitoring Interventions

Following implementation of interventions, the environmental planning model coordination should collect monitoring information from the institutions responsible for each field of action and present it to the relevant stakeholders. This information should not only enable evaluation of implementation for the intervention itself, but also its impacts. This should also involve the comparison of actual impacts with the »expected impacts« originally formulated in the participation process. Based on discussions of interventions' results and impacts, the planning consortium (stakeholders and environmental planning model coordination) should decide on further planning and management activities.

5.1.2 GOOD PRACTICE

Environmental Planning Activities in Hallstatt, Austria

Creating an environmental management plan for communities with cultural heritage is a complex task involving a large number of different stakeholders with varying and often conflicting expectations, interests, and opinions. Despite the challenge, an environmental management plan should intend to actually take account of all these facets. Indeed, all of these various stakeholders are the ones that will be beneficiaries of the plan, those that are bearing its costs, and those that will enable its successful implementation.

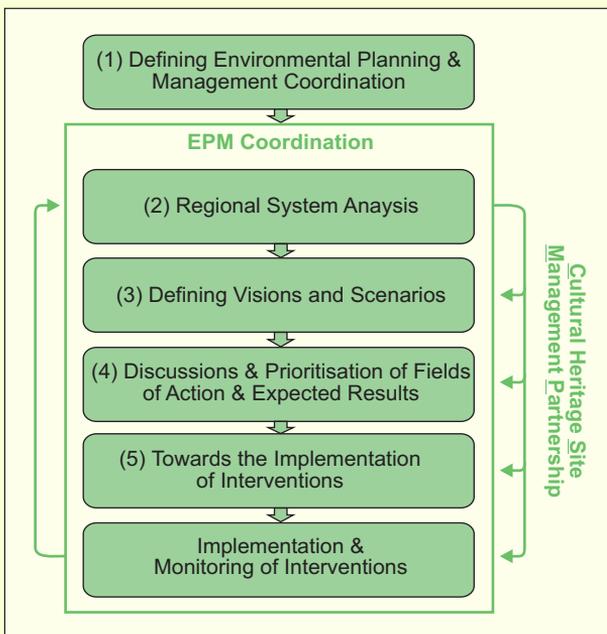


Figure 5: Steps in preparing an integrated environmental management plan.

As a baseline for preparing an environmental management plan, following the principles of the Soft System Methodology (SSM) can provide crucial orientation and guidance in this complex process. SSM is a systematic approach for tackling complex issues in situations involving different stakeholders. These issues are considered complex because they involve different perceptions of reality, or different worldviews. SSM makes it possible to approach these situations in a structured and organized but also flexible manner. It also introduces a cycle of social learning among the participants that goes from finding out about a problematic situation to defining and taking action to improve it. SSM has been developed as part of action research conducted over the last forty years by many systems scientists. SSM has been applied to handle various problematic situations with a degree of complexity similar to that encountered during cultural heritage planning processes. Hutchings and Cassar (2006) describe applications of SSM in the context of cultural heritage, and Nidumolu et al. (2006) in relation to land-use planning. In 2006, Checkland and Poulter also published a review of various SSM applications in numerous business and technology and innovation development cases. Despite this, it appears that the method has not been used yet for integrated planning processes for communities and their cultural heritage sites.

In a series of seven workshops and three public events, including a public world café session organized in Hallstatt in 2011 and 2013, the project teams of the Municipality of Hallstatt and the University of Natural Resources and Life Sciences (BOKU) started to apply and adapt SSM according to CHERPLAN's objectives. These were the first attempts to implement the CHERPLAN approach in the context of cultural heritage sites.

For the workshop series, a working group was formed encompassing representatives of Hallstatt residents with various professional backgrounds (teachers, B&B hosts, retired salt miners, etc.) affiliated with different community-based organizations. However, with the selection of working group members, the Hallstatt municipality representatives specifically wanted to focus on the perspectives of »residents« rather than other important stakeholder groups such as gastronomy or the salt mine. The aim of this workshop series was not only to bring the theoretical planning concept presented above down to a practical level (or to adapt and extend the theoretical concept with experiences from practical applications), but also to provide space for »residents« to speak up. Different than the linear sequence as presented in the concept, the actual work with stakeholders in the community involves parallel elaborations as well as »steps back« and repetition loops. In terms of the regional system analysis, stakeholder identification and »rich picture« development was elaborated iteratively, mapping out main structures in the community and issues/problems, but also potential solutions (»visions«) in relation to »life in the community« as perceived by the working group members.

To prioritize fields of action, and extend development scenarios, a population survey was held in Hallstatt using a questionnaire that was jointly developed by the project teams at the Municipality of Hallstatt, BOKU University, and the working group.

The focus topics were tourism and life quality, satisfaction with communal services, acceptability of potential scenarios in tourism, and related community development. The results were used to narrow down fields of action for further activities in the municipality. Level of employment, local gastronomy, residency and living space, leisure time activities, activities for young people, and continuing education were topics pointed out during this process.

In addition to these »soft facts,« the activities also involved collecting background information on the legal background, socioeconomic and demographic structure, and development of the municipality (and the region), infrastructure data, and community planning documents. A strategic assessment of the community's infrastructure and main economic drivers was carried out. Moreover, as a prominent topic in the discussions during all of the workshops, the impact of »hit and run« tourism on

public infrastructure provision and related cost burdens for the municipality (as the infrastructure provider) were evaluated with a focus on water supply and solid waste management.

More information on the workshop series, facilitation methods used, and topics raised during the workshops and the population survey can be found in CHERPLAN project deliverable D 4.1 (Nicolics et al. 2012).

5.2 PARTICIPATORY PLANNING

(Janez Nared)

Participatory planning in connection to environmental planning and to integral conservation of cultural heritage seeks to transcend the partial interests of individual regional actors and tends toward partnership and joint management. With the help of information, communication, and coordination, partnership will offer potential solutions to development issues. New developmental policies must focus on social capital and on comprehensively including social institutions and cultural elements in everyday life. The greatest possible public participation is necessary in the development process and the close connection of planned activities with their wishes and orientations.

The basic idea of partnership is to unite various actors in a new constellation with the goal of shared solutions to problems, innovations, and policy-making (Svenson & Östhol 2001). The traditional »top-down« approach is giving way to the multi-actor model of management and the network model. In these, local actors enter into the points of departure of all development issues and they are equal in relation to other actors (Arnkil & Spanga 2003). Shaping networks blurs the border between the public and private spheres, which is expressed in a new form of policymaking; namely, governance, which is characterized by the close connection of regional actors and the division of tasks and responsibilities among them (Svenson & Östhol 2001). Because the relations between actors are no longer hierarchical, they are based on trust, reputation, customs and habits, reciprocity, reliability, and openness to learning (Schobben 2000).

Initiating bottom-up processes with the involvement of various stakeholders, building up networks, cooperation, and communication are crucial factors for the success of sustainable development. Sustainable development can be attained through participation processes and bottom-up network structures. This approach is considered a normative participation process based on people participating in the decision-making process from the very beginning. The main advantage of adopting a bottom-up approach is participants' identification with decisions that concern their environment (Alfarè & Ruoss 2007).

The essential components of the participation process are communication, cooperation, and consensus (Geißendörfer et al. 2003, 52). Successful management of the participation process makes it possible to achieve many goals: ironing out differences between different perspectives, shaping solutions acceptable to all social groups, preventing unproductive competition, ensuring the participation and motivation of local actors, participants' identification with decisions that concern their environment, and strengthening their creativity and recognition. Incorporating the views of the public into planning decisions gives the decisions greater legitimacy (Hage, Leroy, & Petersen 2009), and it increases empowerment, enhances vision-making and advocacy capabilities (Reed 2008; Ricketts 2008; Pacione 2014), initiates a process of social learning, and enhances local knowledge. It could inform and involve a more diverse public audience, deepen mutual understandings, cross interest relationships, explore and integrate new ideas and solutions that may not have been otherwise considered, and ensure that planning and decision-making are informed by the needs and interests of the communities affected (Sayce et al. 2013). The participation process strengthens regional identity and promotes comparative advantages based on local knowledge and learning as well as the establishment of connections at the local level. It is therefore necessary to take people's opinions into account and thus emphasize the special features of the region

Although participation also has its disadvantages, especially because of its duration and financial demands, moderators' knowledge must not be neglected either. Often individual groups are excluded if they do not have the knowledge and skills to participate in this demanding and lengthy process. Additional weaknesses become manifest if the participation process is informal (e.g., in a workshop or forum); such groups do not have legal status and are unable to take measures, their proposals are nonbinding, and their opportunities to carry out the decisions they adopt are also limited. However, due to their informal procedures, openness, networking, high level of motivation, and creativity, such activity also has many advantages. It is therefore reasonable to establish connections with administrative structures, which increases the influence of informal groups over actual decisions. The question therefore arises how to shape the participation process so that it is democratic and enables the inclusion of all actors in decision-making and in producing regional plans (Geißendörfer et al. 2003, 17, 18; Rauch, Bartels, & Engel 2001).

The role of participatory planning is exceptionally important because local cultures, geographical conditions, urban economic composition, local management styles, and local governance conditions are site-specific and have a significant influence on planning decisions. In addition, the participation process has also been endorsed through European structural funds. In 1988 the European Commission included partnership among the principles for structural funds at that time, and this has been maintained until today. Planning is thereby accorded higher quality, legitimacy, affiliation, and support from the population, which is a precondition for successfully implementing planning activities.

Regional actors can be included in the planning process in a number of different ways (Lurcott 2005; Rauch, Bartels, & Engel 2001; Geißendörfer et al. 2003): personal interviews, structured interviews, workshops, brainstorming sessions, interest group forums, leadership conferences, mapping workshops, random telephone surveys, on-line interactive websites with voting, newspaper inserts for voting, roundtables, regional congresses and conferences, and so on.

However, it is not enough to simply invite regional actors to participate. It is necessary to take their opinions into account and to put them into practice to the greatest extent possible, thereby creating a friendly environment for everyone.

5.2.1 RECOMMENDATIONS

Government versus Governance

Management of areas, sectors, and also cultural heritage sites is normally clearly defined in various acts, building the framework at different government levels, but still some undefined areas can be found where the jurisdictions and competences are blurred, being either a matter shared by various sectors or at different territorial levels, or where different institutions deal with inhabitants' expectations. In such cases, when the competences and interests interweave, common solutions should be searched for by joining all the crucial stakeholders into a process where matters are discussed and decided mutually. So-called governance does not replace jurisdictions of engaged institutions, but binds them particularly in areas where joint effort provides additional benefits to all parties included. Inclusion in the decision-making process is especially relevant in the case of local inhabitants due to their tacit knowledge that could effectively fit the solutions taken to the local environment.

Include the Stakeholders from the Very Beginning

The starting point of participatory planning must be truthful inclusion of all relevant stakeholders in the planning process, where the stakeholders are not only included in the process from the first steps of the planning process, but should potentially be the initiators and the driving force of the process. In this regard, the planning procedures and roles of stakeholders included should be clearly defined in advance:

- Define the issues and the scale of challenges at stake.
- Invite a network of stakeholders relevant for the cultural heritage site and the issue to be tackled.

- Start discussions and respect different points of view.
- Encourage the active participation of the stakeholders. Discuss and wherever possible adapt their proposals and include them in plans.
- Try to highlight the main alternative suggestions and opinions and, where possible, achieve broad agreement on the joint vision and solutions.
- Implement the plans agreed upon.

Start with working groups on specific topics with all political, administrative, and planning authorities. Ensure that there are sufficient resources to follow up the advice and recommendations (Nared & Razpotnik Visković 2012).

Provision of an Effective and Transparent Communication Platform

On the basis of the joint recognition of the extent and challenges of the cultural heritage site, a joint platform for communication and cooperation should be established for planning and implementing activities. To establish a joint platform, the roles and issues of potential conflict of the participating authorities should be identified and resolved as far as possible. Such potential conflicts may be related to any of the following:

- Conservation versus development interests.
- Heritage versus the interests in the rest of the area.
- Differences between various stakeholders and professionals.

A cooperation platform can be established in various ways: through a common communication and information platform, which provides detailed information to all relevant political, administrative, and planning bodies, through working groups that work together on common issues, through voluntary associations, or through joint institutions that provide planning activities for all entities included. A joint cooperation platform should be seen as a generic term. Joint bodies for cultural heritage or wider regional development may be established as an important step towards possibly more comprehensive integration at a future date (Nared & Razpotnik Visković 2012).

Include the Decisions in Planning Documents

Inclusion of stakeholders has manifold benefits such as strengthened connectedness to the region, enhanced local culture and tradition, and new solutions brought from connecting different aspects, but if the decisions of the participatory process are not taken seriously the process might become counterproductive and could cause additional mistrust. To this end, participatory planning should not use the participatory process to inform inhabitants about decisions taken and thus expect their benevolence, but should truly put them into a position to decide or at least to guide the decisions at the greatest possible level. Thus, planning would not simply obtain acceptance from the inhabitants, but would at the same time provide necessary legitimacy to the decisions made and to the entire planning process.

5.2.2 GOOD PRACTICE

Participatory Planning in the Gothenburg Region, Sweden (based on: Metropolitan Association ... 2014; Participative Approach ... 2014)

The Gothenburg Region Association of Local Authorities (GR) is a cooperative organization uniting thirteen municipalities in western Sweden. It was established in 1995 by thirteen municipalities in the Gothenburg area, being aware that working together could provide better prospects for future development of the entire area. The task of the organization is to enhance inter-municipal cooperation between its member municipalities and to provide a regional platform for networking and exchanging ideas and experience within the region. GR contributes towards long-term sustainable development in the mem-

ber municipalities by focusing on issues such as regional planning, environment, traffic, the labor market, welfare, social services, competence development, education, and research. As a multipurpose institution, it carries out various tasks and offers multi-sectoral answers to local development problems, increasing the possibilities for regional management through various incentives.

GR is a formal organization that has chosen informal governance as a way to develop the region. To enable joint responsibility, GR decided to move from plan to process by introducing more sharing, transparency, and flexibility into planning in order to achieve consensus and consistency over time. Since 2002, GR has commenced a constructive dialogue between the GR executive board and the member municipalities' councils. The dialogue was based on the common vision of sustainable development. Four regional consultation rounds have been carried out so far, defining issues to cooperate on, the mode of cooperation, regional goals, and strategies on sustainable growth that focus on a sustainable regional structure.

This approach provides an arena for broad political dialogue that simplifies necessary regional decisions, creates networks, spreads ideas, and stimulates an exchange of experiences. Various regional projects contribute towards long-term sustainable development in the member municipalities.

In the consultation rounds, every participant has been given a chance to grasp what it is all about, to believe, and to make the regional mindset their own. Instead of showing people what to do, the strategy has been to bring everyone to a common understanding and to embody the essence of working together towards sustainability. Informal governance has proven to be successful and beneficial in the quest for sustainable growth within the region. New insights led to a paradigm shift in which GR moved from showing the municipalities what to do to making them believe and act themselves.

Cooperation between the GR municipalities has resulted in different regional agreements such as the goal and strategy document »Sustainable Growth: Goals and Strategies That Focus on a Sustainable Regional Structure« and the »Structural Illustration for the Gothenburg Region.«

The GR is considered a reliable and trustworthy organization that supports the member municipalities with a wide variety of issues, including competence-enhancing initiatives to offer service, collective usage, and research and development initiatives. Through municipal cooperation, they have managed to create an awareness of the important role that each single municipality plays in the regional context.

The impacts of mutual cooperation are as follows:

- GR provides courses and conferences to raise competence skills within a variety of professions.
- The »Structural Illustration for the Gothenburg Region« is an agreement on joint responsibility in order to achieve a sustainable regional structure from a spatial development point of view. The GR municipalities' comprehensive plans are based on objectives for the regional development of the Gothenburg region according to the agreement mentioned above.
- Twenty to thirty research reports are published by the research and development department each year.
- GR has established unique collaboration for the country in education, which now includes all types of schools, from preschool to adult education.

5.3 LEADING A PARTICIPATORY PROCESS

(Loredana Alfarè, Janez Nared)

As described in the previous chapter, public participation in decision-making plays an important role, which often proves to be decisive for the success of decisions made and above all for acceptance of those decisions among inhabitants (although this should not be the final goal of the including stakeholders). Public participation can be described as »an open, accountable process through which individuals

and groups within selected communities can exchange views and influence decision-making. It is a democratic process of engaging people in thinking, deciding, planning, and playing an active part in the development and operation of services that affect their lives« (What is Public Participation 2014).

Participatory processes can help define the problem and identify the solution, drawing from a wide variety of viewpoints, increasing the understanding of the interlinked nature of problems facing society. Participatory processes can improve implementation because a decision or a policy will be more effective if a broad coalition of stakeholders supports the proposal and works together to deliver it. Participatory processes can increase public trust because openness to conflicting claims and views increases the credibility of the final decision and stimulates an active civil society.

There are different forms of public participation, and the relevant public also depends on the topic being addressed. The public may be average citizens, the stakeholders in a particular project or policy, experts, or even members of government and private industry. In general, policy processes can be seen as a three-step cycle of planning, implementation, and evaluation, whereby a participatory approach may be used in some of the steps or in all three steps (Elliott et al. 2005).

There are also different levels of public participation. The best-known definition is the one by Sherry Arnstein (1969), who developed a »ladder« of eight possible levels of public participation, from minimal public participation to actually handing over power to the community for making the decision. Arnstein assigns a positive value to participation. The lowest ladder levels, where the government gives information with a view to strengthening its power, are regarded as efforts aimed at manipulating, »treating,« and placating citizens. Climbing up the ladder, the population progressively gains real power and influence over decisions and changes concerning themselves. The ladder also highlights that »little participation« can easily turn into »mock participation.«

It is all about sharing information, perceptions, needs, visions, and, in a broader sense, implicit and explicit knowledge, thus converting them all into »project assets.« The actors that will take part in the implementation phase must get to feel they are part of the project: in order to achieve this, nothing proves more effective than making it clear that the bottom-up approach is being fully followed.

In any case, stakeholders' involvement and consultation is not enough: their effective participation needs methodologies, competences, and rules useful in order to help them find the most appropriate strategies to manage changes and innovation processes; these tools are focused on human resource management and development (Marcetta 2007).

To make participatory processes effective, they should include the following (Geoghegan, Renard, & Brown 2004):

- »• the early, active and continual involvement of all stakeholders;
- the incorporation of the views and opinions of individuals as well as stakeholder groups;
- provision of information to allow stakeholders to form opinions and make decisions;
- accommodation for the inequities in power among stakeholders;
- respect for the process and the decisions that are reached.«

Furthermore, effective participation requires organizational capacity, committed and well-informed participants, enabling policies, and agreement on the process (Geoghegan, Renard, & Brown 2004).

Following Reed, (2008) »it is argued that stakeholder participation needs to be underpinned by a philosophy that emphasizes empowerment, equity, trust and learning. Where relevant, participation should be considered as early as possible and throughout the process, representing relevant stakeholders systematically. The process needs to have clear objectives from the outset, and should not overlook the need for highly skilled facilitation. Local and scientific knowledge can be integrated to provide a more comprehensive understanding of complex and dynamic socio-ecological systems and processes.«

A systematic approach to public participation requires careful identification of stakeholders (stakeholder analysis) and a detailed plan for their engagement. Special care should be dedicated to less powerful social groups, helping them join the planning process (Stakeholders Analysis ... 2011). Stakeholders are an individual or group influenced by and with an ability to significantly impact (positively or negatively)

the topical area of interest (Stakeholders Analysis ... 2011) and they mostly represent the following participant groups (Van Asselt et al. 2001): government, citizens, and interest groups, such as non-governmental organizations, business, and scientific experts.

As well as selection of stakeholders, a plan for their engagement strongly depends on the topic to be discussed, time available, and results expected. The aim of the process is conflict resolution, creation of knowledge, sharing of knowledge between different actors, sharing of rules, communication improvement, and quality improvement (Bigaran et al. 2013). This demands methodology adapted to each specific case. Therefore, the facilitator's role is of crucial importance. A good facilitator must be neutral, pay great attention to the process, help the group to progress, stimulate discussion with open questions, summarize and keep track of the discussions, and support the group in its effort to get to the conclusions. Furthermore, a facilitator should first of all develop a specific skill in active listening, putting aside his own ideas and perspectives and giving participants the chance to explain and discuss their different perspectives and points of view in a process of mutual understanding of different positions and underlying interests, and, second, be able to use different approaches and techniques according to the specific needs of each pilot project (Bigaran et al. 2013).

Process-wise, the public participation should include (Geoghegan, Renard, & Brown 2004):

- Problem identification;
- Definition of goals and objectives;
- Collection of information to base decisions on;
- Analysis of information and identification of options;
- Formulation of decisions and plans for implementing them;
- Implementation; and
- Monitoring and evaluation.

If the participatory process yields fruitful results, it could strengthen the social capital of the area by increasing the likelihood of future successful interventions as people make connections and become more confident about their ability to address them and know who might support the process (Participatory Process 2011).

5.3.1 RECOMMENDATIONS

Meisterheim, Cretney, and Cretney (2011) defined seven guiding principles for process design:

Involve the Right People at the Right Time

As described earlier, stakeholders should be involved from the very beginning of the process, in which stakeholders' analysis should clearly reflect the needs and content of the process. By inviting the right people, identification with the plan will be easy because they will have been involved in creating it. The extra time invested in the beginning will pay off in the end. Intentionally identifying those with expertise, passion, or skills is one strategic way to use people's time wisely and make the planning process efficient and effective.

Plan for the Harvest

A participation process must be planned and should conform to stakeholders' expectations. Its steps should be clearly defined, as well as their outcomes, keeping in mind the form in which the information needs to be communicated. Attention and energy should also be given to non-tangible outcomes: relationships, trust, and energy. These are often the drivers of lasting change; consider ways to carry them forward.

Ask Powerful Questions

To gain participants' interest, the participation process must be professionally facilitated and fully tuned to a specific situation or problem. Raising the right questions could provide manifold results, a common learning process, and innovative ideas arising from confrontation of ideas. Powerful questions invite

inquiry and new possibilities. Take time to design the questions that need to be asked; a good question will be specific and clear, get to the heart of the matter, and make the work easier. The wrong question can achieve the opposite. Adjust the question to the situation and to participating stakeholders.

Reflect at Every Step

Stick to the basic idea of the process and stay in line with the need and purpose by building in reflection and learning loops at every phase. Build reflection into every stage of the planning process as well. Emphasize all important lessons and ensure they are properly recognized and incorporated. Before moving on, check the purpose and reflect on progress, learning, and remaining questions. Invite a learning attitude in one another.

Know the Boundaries

In preparing the plan, the rules of the process and its boundaries should be clearly set. Following the rules will give the facilitator greater authority. Lack of a mandate can lead to disempowerment; lack of time or resources can limit the effectiveness of the work and therefore the outcome. Agree to work within your own parameters of success and be clear what can successfully be accomplished within the parameters offered by the client.

Connect the Methodologies

Experience in practicing participatory processes during recent decades has resulted in various methods and techniques that make the participation process powerful and attractive. Many different methodological handbooks and guidelines have been prepared, giving facilitators a solid toolbox for guiding the process. No one methodology serves all purposes, and every engagement design is unique. It is by combining methodologies that the »magic« arises. Therefore, selection of methods should be carefully made, adjusting it to the final aim of the process, to engaged participants, and to the specific atmosphere in the participatory event.

Define the Context before Choosing the Methodology

Identify the context of the organizational challenge before selecting the planning framework and specific methodologies or tools. Complex adaptive systems need a planning framework and tools suited for complexity, adaptability, resilience, flexibility, and responsiveness because the outcomes are not predictable or linear. A tool designed for a linear problem will not serve a complex one. For problems that are predictable, tools informed through analysis and by expert knowledge may be needed. Participatory processes are designed for complex situations, allowing people to engage in learning together.

In addition to the steps mentioned above, the following simple guidelines might help in successful management of a participatory process (Participatory Processes ... 2014):

- »• Be open, flexible and humble towards each other. Give everybody a chance to speak, participate and listen to each other even if you might disagree.
- It is often easier to develop trust by working in smaller groups.
- Do not pressure anyone to participate. If someone doesn't feel comfortable to be involved straight away, ask them to be timekeepers, moderators or help in another capacity.
- If the participants do not know each other from before, it can be wise to have homogenous groups (e.g., divided by gender, age, job, etc.) to increase participation. Once the participants know each other and feel more secure and comfortable it may be more productive to have mixed groups.
- Use open questions (e.g., questions that start with who, what, where, when and how) rather than questions that require yes/no answers. Open questions are more productive and require the participants to think through their answers.
- Plan to have enough time to go through all of the stages in the process, particularly the end stage and the evaluation stage, both of which can be the most valuable.«

5.3.2 GOOD PRACTICE

Strategic Planning in the Municipality of Idrija: Preparing the Innovative Strategy of Sustainable Development of the Municipality of Idrija and the Management Plan for the Heritage of Mercury, Idrija, Slovenia

After successful transition from the mining era to flourishing industry, represented by two global corporations, the Municipality of Idrija started to consider various options for economic diversification that might make the area more resilient to global economic changes. In this process, the municipality was supported by external project groups that have developed different strategic documents in the scope of various transnational cooperation projects that chart the future development of the municipality.

In particular, cooperation between the Scientific Research Center of the Slovene Academy of Sciences and Arts and the Municipality of Idrija began in 2007 with the projects DIAMONT (Interreg IIIB; cf. Razpotnik Visković, Nared, & Urbanc 2008; Razpotnik Visković, Urbanc, & Nared 2009) and CAPACities (Transnational Cooperation Program Alpine Space; Nared & Perko 2010; Nared et al. 2011; Urbanc, Nared, & Bole 2012; Guérin 2010). In the scope of the DIAMONT project, two workshops aimed to define crucial development issues in the municipality. Within the process, lack of an integral development strategy proved to be a critical question for future development. Consequently, pilot activities in the CAPACities project were directed to reach this goal. Already in the preparation of the project, the project group met with municipal representatives and public institutions working in the municipality in order to achieve a harmonized perspective on planned activities and, at the same time, the support of key decision-makers, whose inclusion could greatly contribute to the success of the project. The Municipality of Idrija confirmed its interest in participating in the project by signing an agreement on co-financing the CAPACities project, and it has also continually provided all necessary input.

The main objective was to prepare an Innovative Strategy for Sustainable Development of the Municipality of Idrija to define the municipality's future goals and engage all development potentials and drivers in a common development scheme. Within the preparation process, all of the tasks are performed in a bottom-up participatory process that allows many innovations regarding participation, expression of interests, and consensus-building. The process was therefore open to all groups of stakeholders, with special regard for underprivileged groups and seeking to involve many innovative elements. To harmonize the work as much as possible during preparation of the strategy, we prepared six working groups, each of which was coordinated by a representative of the institute and a representative of the municipality. This ensured the constant flow of information between both institutions, and at the same time it enabled municipal officials to identify with the strategy, which in our opinion contributes to more effective realization of the strategic goals set.

Because realizing these goals also requires general agreement, we sought to include the broadest circle of people possible in preparing the strategy. Initiation of bottom-up processes with the involvement of various stakeholders, building up networks, cooperation, and communication are crucial factors for the success of sustainable development. In the case of Idrija, regional actors were included in the planning process in a number of ways: numerous personal interviews, structured interviews, five workshops, brainstorming sessions, leadership meetings, roundtables, questionnaires, and so on. As a result, the Innovative Strategy of Sustainable Development of the Municipality of Idrija (Nared et al. 2011) was unanimously confirmed by the municipal council and represents a framework for all development activities in the municipality.

In 2011, we launched a new series of meetings for developing a management plan for mercury heritage in Idrija. The issues discussed at the meetings included protection and development



BOJAN ERHARTIČ

Figure 7: Workshop in Idrija, Slovenia.

of this area, development starting points, relations among stakeholders, infrastructure, and the condition of individual monuments. By joining the experiences from the previous participatory processes and the knowledge of local stakeholders, a management plan was developed, shaping basic relations among cultural heritage institutions and presenting a common vision and detailed implementation plan that might contribute to more balanced development of the area and to the preservation of cultural heritage, enabling it to be an important economic driver in the future.

5.4 WATER-SUPPLY CHALLENGES AT CULTURAL HERITAGE SITES

(Laurent Richard, Sandra Nicolics, Reinhard Perfler)

Water is essential to life and to the development of our communities. The supply of water to a community requires important infrastructure that has to be designed, built, operated, and maintained for enabling service vital to all. Among all the actors involved, the central role here is played by the water utility (public or private), depending on regulations and context, and whose responsibility is to provide consumers with access to safe and sufficient water as well as to ensure fire protection.

Supplying water to consumers requires processes and infrastructure. A possible combination of these processes is shown in Figure 8. The first step is to withdraw water from a resource, which is usually either surface water (lake, river) or groundwater. Wells, boreholes, and spring galleries are typical abstraction infrastructure. Depending on the local context, rainwater or seawater might be additional options.

The next process is water transmission. This consists of conveying the abstracted water toward a storage tank or a treatment plant and is usually achieved through a series of pipelines or open flow channels (e.g., aqueducts). Transmission is usually necessary in the case of long distances between the water resource and the supply area. In that case, transmission is associated with the transport of untreated water during which any supply to consumers is excluded. If the water transmitted does not meet drinking-water quality requirements, it will have to be purified in a treatment plant. The type and extent of treatment (physical, chemical, or biological) will depend on the parameters to be improved. After treatment, the water is stored in storage tanks. These tanks are necessary to compensate the variations between the rates of water yield and consumption. Storage tanks also guarantee that a given volume of water is available at any time for fire protection. Depending on the local context (e.g., topography and price of energy), the storage tanks can be elevated (water tower) or booster pumps will be used. From the storage tanks, water is then distributed to consumers through a series of (pressurized) pipes. Throughout all the processes, pumping stations might be necessary to enable the water to overcome elevation differences and enable the flow of water in the desired directions.

Communities with cultural heritage sites face specific challenges with regard to water supply. One of them is extremely high peak demand, required infrastructure, and cost recovery. The size of the population to be supplied in tourism areas is subject to important seasonal variations. During the high tourism season, the water demand will be much higher than in the low season and this must be considered during the planning and operation of water-supply systems. A possible issue might arise with the fact that the infrastructure is significantly oversized for most times of the year. In addition to being a potential issue for the quality of the water supplied, this might also be a problem with regard to cost recovery and tariff structures.

Communities with cultural heritage sites also face the issue of aging infrastructure and water losses. Solutions exist to reduce such leakages, which are influenced by several factors including soil characteristics, soil movement, traffic loading, defects in pipes, poor quality of joints, poor quality of workmanship, damage due to excavation for other purposes, pipe age and corrosion level, high pressure in the system, and extreme temperatures (Internet 6). Leaking pipes can be replaced or rehabilitated, but this usually implies digging large trenches where the pipes are located. The associated construction sites may have undesired temporary impacts on the community, including blocking pedestrian and/or vehicular traffic, visual pollution, and noise. At cultural heritage sites, aesthetic issues also have to be considered. The construction sites should not alter the quality of the cultural heritage site, which implies that the same construction materials for roads and sidewalks should be used. Trenchless methods are available for replacing and rehabilitating water-supply pipes. The methods still require opening pits (holes on each side of the pipes to be replaced) but avoid digging long trenches. Examples of methods for pipe replacement and rehabilitation are pipe ramming, pipe jacking, horizontal directional drilling, the fit lining method, the cured in-place pipe method, and the pipe bursting method. The impact of water towers on a landscape is obviously relevant, especially in flat areas. An alternative to a water tower would be an underground water reservoir combined with a pumping station. However, this solution requires a constant supply of energy for the pumps (whereas with a water tower the pumps are in operation only a few hours per day).

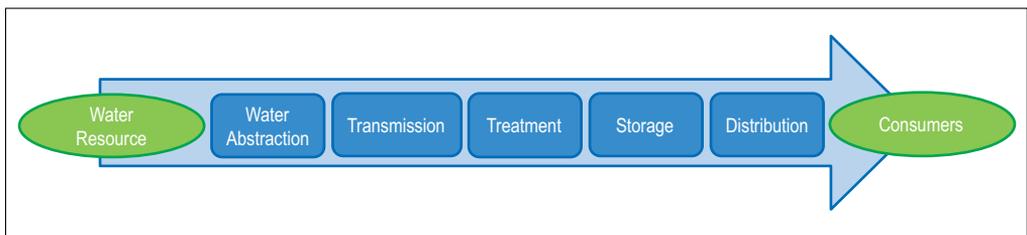


Figure 8: Example of processes required to supply water from the source to consumers.

Typical operation and maintenance activities for storage tanks include periodic cleaning of tanks, repair of leakage, electrical installations (e.g., lights), sensors for water level, and protective fences.

The water utilities in all of southeast Europe face more or less similar problems, although their severity varies from country to country. Some of the most common problems are:

- A relatively low level of drinking water supply for the population in rural areas;
- Large water losses due to aging water-supply infrastructure;
- Significant unaccounted-for water losses;
- Poor operating efficiency of the utilities;
- Water and wastewater tariffs not set at a level for cost recovery;
- A large proportion of unpaid bills (Strategies for Reform ... 2009).

5.4.1 RECOMMENDATIONS

To overcome the challenges mentioned above, water utilities have many tools at their disposal:

Monitoring and Information Management with GIS

Geographical Information Systems (GIS) are computer-based systems that enable the systematic management of geo-referenced data describing water-supply systems. Examples of data usually stored are pipes (lengths, diameter, material, construction year, and depth), hydrants, consumption points (customer identification, yearly consumptions, etc.), and valves (type, diameter, material, and construction year). In addition to technical equipment (hardware and software), a staff with appropriate knowhow and skills is required to manage the GIS. Apart from being used for knowledge storage and management, GIS can also be used to conduct spatial analyses, many of which are required for good planning and management.

Performance Indicators (PI) and Benchmarking

Performance indicators are defined as the »measures of the efficiency and effectiveness of the delivery of the services by an undertaking that results from the combinations of several variables« (Alegre et al. 2006). Performance indicators are very important tools that can be used by water utilities as a basis for strategy development. They are generally categorized according to the following headings: water resources, personnel, physical, operational, quality of service, economic, and financial. The information provided by a performance indicator is the result of a comparison with either target values, previous values of the same indicator, or values of the same indicator from other water utilities.

Water Safety Plan (WSP)

A water safety plan is a tool for managing drinking-water quality, starting from the catchment to the consumer level. Its objective is to ensure the safety of drinking water by using a comprehensive risk assessment and risk-management approach. A water safety plan comprises three main components: a system assessment, operational monitoring of control measures (also referred as »barriers«), and management plans. The system assessment aims at evaluating whether the entire drinking water-supply chain is capable of supplying water that meets health-based regulatory targets and at identifying potential hazards and risks. Barriers or control measures are steps »that directly affect water quality and which, collectively, ensure that water consistently meets health-base targets« (Davison et al. 2005) and that must be monitored. The management plan contains documentation of the system assessment and monitoring as well as descriptions of the actions to be taken to minimize risks in normal operation and incident conditions (Guidelines ... 2004; Water Safety Planning ... 2012).

Groundwater Source Protection Zones

In order to protect groundwater resources, protection areas (or source protection zones) can be defined. Zoning mainly depends on the groundwater residence time and the distance between the source of

pollution and the structure used to collect the raw water. The zones where human activities are regulated will be defined based on a model of the groundwater environment.

Modelling Water-Supply Systems

Computer-based models of water-supply systems are standard tools for planners, operators, and managers (Methods et al. 2003). Models can be used to better understand the functioning of water-supply infrastructure under various demand and flow scenarios and with regard to hydraulic and water-quality aspects. They can also be used to assess and optimize the hydraulic performance of distribution systems and their energy consumptions. Models also evaluate the impacts of proposed development (e.g., the extension of the water-supply networks), operational modifications (e.g., change in pump operations), and failure events (e.g., breaks in main pipes) on the distribution systems. The results of simulations performed with computed-based models of distribution systems are therefore essential for decision-makers. The accuracy requested for the model will depend on the modelling objectives and will also be limited by data availability and quality (description of water-supply infrastructure, use of GIS data, etc.).

5.4.2 GOOD PRACTICE

Water Loss Reduction in Water Distribution Networks in the West Balkan Region

Kovač (2006) describes water loss reduction strategies in Zagreb (Croatia) and Gračanica (Bosnia-Herzegovina). With more than 2,900 km of pipelines and more than 100,000 connections, Zagreb's distribution system is the largest in the entire region. In 2005 pressure control for leakage reduction was piloted in a selected zone in a residential area with multistory buildings. In these buildings, with an average of ten floors, high pressures are required, corresponding to a high level of leakage. Locations for measuring and control instruments (flowmeter, valve controller, and GSM monitoring) were selected to measure flow and pressure within the zone. The initial minimum flow was 44 l/s (160 m³/h) and the initial inlet pressure was 6.5 bar during the day and up to 7.1 bar during the night. In a first regulation step, the outlet pressure was fixed to 5.7 bar using pressure reduction valves for constant pressure control. In a second step, the outlet pressure was controlled in a manner to vary with the flow (day pressure: 5.7 bar, night pressure: reduction to 4.8 bar). Through the remarkable flow reductions (up to 39%), losses (leakages) could be reduced by approximately 25% and around 900 m³ could be saved per day.

The town of Gračanica has 70 km of mains and 4,500 service connections, serving a population of around 15,000 mainly in private houses with two floors. Also here, pressure control was selected as the most promising approach to reduce losses but also to observe the impact of pressure reduction on burst frequencies. For a start, the distribution system was divided into six zones where pressure control was implemented. Again, after the selection of appropriate locations, pressure reduction valves were installed together with monitoring and control instruments (flowmeter, valve controller, and remote GSM monitoring). Before the implementation of the pressure control, pressure ranged between 4.8 and 5.3 bar. After fixed pressure control of the outlet to 4 bar, in a second step, pressure was modulated according to the current flow, taking into consideration the actual current demand. Due to pressure reduction and control, the daily inflow was reduced by 12% and bursts in the distribution system could be reduced dramatically (59% reduction for mains, 72% for service connections).

5.5 WASTEWATER MANAGEMENT

(Laurent Richard, Sandra Nicolics, Reinhard Perfler)

Poorly managed wastewater (domestic, industrial, and/or runoff rainwater) is a real threat to communities and their natural environment. Wastewater from domestic and industrial sources may contain harmful compounds such as pathogens or chemicals, and it therefore represents a health risk and a potential source of pollution. The discharge of untreated wastewater into the environment may affect human health by several routes, including pollution of drinking water resources, intrusion into the food chain (via fruits, vegetables, and shellfish), contact with contaminated water (e.g., bathing), or providing breeding sites for insects that spread diseases (Smith 2002). Typical examples of environmental pollution resulting from poor wastewater management are eutrophication and oxygen depletion processes in bodies of fresh water (Borysova et al. 2005).

Poor infrastructure design and management also has a negative impact on the daily life of community members, visitors' experience of the site, and the image of the community in general. This is the case, for instance, when clogged drains and streams result in the development of scum and odors. Heavy precipitation may also cause flooding and severe losses to communities where runoff rainwater (storm water) is not appropriately managed. To avoid these issues, appropriate wastewater management should be implemented.

According to the international standard ISO 24511/CD, appropriate wastewater management should aim for:

- Protection of human health and safety;
- Protection of the natural environment through preservation and conservation of natural resources, control of overflows, and preservation of flora and fauna;
- Protection of the built/public environment;
- Promotion of sustainable development.

Wastewater management is a vital task of local administrations. Activities include the planning and management of infrastructure and services required to collect, transport, and treat wastewater, and to dispose of and discharge treatment residues and effluent. Various strategies are available to wastewater managers. The strategy(s) implemented should always respect local legislation, be adapted to the local context, and be implemented in a financially viable and cost-effective manner.

In conventional urban wastewater management systems, wastewater and storm water are typically collected and drained through a sewer system, which can be combined, separate, or a combination of both. The wastewater collected is treated at a wastewater treatment plant, which discharges its effluent into a receiving body of water. Treatment residues and sludge are either disposed of or reused. The fate of storm water runoff depends on the type of sewer system. Unpolluted surface runoff can be infiltrated or discharged into a receiving body of water (e.g., a separate system). Combined sewer systems collect storm water and wastewater in the same pipes. They are designed to overflow during periods of heavy rainfall.

The design of collecting systems for urban wastewater and surface runoff depends on the characteristics of the settlements and is mainly based on geographical, hydrological, and hydraulic considerations. The water quantities to be collected, transported, and discharged must be estimated. Information required will include the size of the catchment, its topography, the nature of surfaces (e.g., green surfaces and roads), the rain regime, the population size, the spatial distribution of buildings, and the capacity of existing urban wastewater system. The information needed is not always available in written or digital forms (e.g., reports and maps), and therefore planners might need to conduct field measurements. Domestic wastewater can be estimated based on the population size and the specific per capita consumption. The storm water amount depends on rain intensity and duration, and on the physical characteristics of the catchment area considered. Factors such as the size of the catchment area, the topography, or the degree of imperviousness of the surfaces must be considered. The permeability of surfaces plays



Figure 9: Infrastructure in the center of Idrija, Slovenia.

an important role in urban areas. Surfaces with vegetation can slow down the rate of runoff from storm water (by allowing runoff to infiltrate into the soil), whereas impervious surfaces (i.e., paved or without vegetation) can foster high storm water peak flows of short duration.

After the wastewater is collected, it enters the wastewater treatment system. Wastewater treatment is usually divided into five treatment levels/steps: preliminary, primary, secondary, advanced, and individual. Each level/step involves the processing of specific pollutants:

- Preliminary treatment aims at the removal of coarse solids and other large material often found in raw wastewater;
- Primary treatment consists of a physical and/sometimes chemical process involving settlement of suspended solids, or other processes in which the biochemical oxygen demand (BOD₅) of the incoming wastewater is reduced by at least 20% before discharge and the total suspended solids of the incoming wastewater are reduced by at least 50% (definition according to 91/271/EEC);
- Secondary treatment consists of biological treatment with a secondary settlement or other process;
- Advanced/tertiary wastewater treatment is employed when specific wastewater constituents that cannot be removed by secondary treatment must be removed;
- Individual treatment processes are necessary to remove nitrogen, phosphorus, additional suspended solids, refractory organics, heavy metals, and other undesirable dissolved substances.

Because advanced treatment usually follows high-rate secondary treatment, it is sometimes referred to as tertiary treatment. However, advanced treatment processes are sometimes combined with primary or secondary treatment (e.g., chemical addition to primary clarifiers or aeration basins to remove phosphorus) or used in place of secondary treatment (e.g., overland flow treatment of primary effluent; Pescod 1992).

The underlying concept of conventional urban wastewater management systems is that wastewater is first of all a waste that must be collected and treated so as to ensure hygiene, prevention of flooding, and protection of the environment. This concept and the corresponding urban wastewater management systems that still prevail today go back to the nineteenth century during rapid industrialization and urbanization in many western countries. Many disease outbreaks in some cities (e.g., London's 1854 cholera outbreak) led to the improvement and development of wastewater and water-supply infrastructure. Many publications document the historical development of wastewater treatment in many countries; these include works by Seeger (1999) for Germany and Burian et al. (2000) for the U.S. However, the world has changed since the nineteenth century and the global population has increased dramatically. This has led to higher pressures on resources, including water and energy. Further issues related to aging of infrastructure, energy costs, new technologies, water resources, water pollution, urbanization, migration, climate change, and escalating costs have gained importance. With this in mind, scientists and water professionals have carried out research on more sustainable water-management approaches.

5.5.1 RECOMMENDATIONS

Recommendations for implementing alternative or more sustainable urban wastewater management systems:

Wastewater as a Valuable Resource

Wastewater can be a source of energy (e.g., biogas resulting from the anaerobic digestion process) and it also contains nutrients (e.g., nitrogen and phosphorus) that can be used for agricultural purposes and hence reduce the need for chemical fertilizers. Wastewater reuse also enables the reduction of tap water consumption, which can be an attractive option in water-scarce areas (Bixio et al. 2005).

Ecological Sanitation

Ecological sanitation concepts rely on the following key principles: closing natural cycles (water and nutrients), using the bioactive functions of the local landscape, using resources efficiently, and reducing waste generation.

Ecological sanitation is generally based on separate collection of different wastewater fractions (Larsen & Gujer 1997) and, because it would be too expensive and impractical to collect and treat the different unmixed waste streams with a centralized system, on-site technologies are favored. Treatment facilities required to treat the wastewater streams may use local materials and in some cases be well integrated into the local landscape (e.g., constructed wetlands). Source separation could lead to more direct sustainable solutions than traditional approaches if some challenges were overcome. One of the main challenges is that people like source separation (Lienert & Larsen 2010) but put more importance on convenience and food security.

Storm Water Management

Conventional systems are designed to collect and convey storm water as quickly as possible through underground pipe systems and discharge it into receiving bodies of water. In areas where they have been implemented, these systems have proven to be successful at the local level because they considerably reduce risks related to flooding. The main issues are related to increased risks of flooding downstream and to discharge of polluted surface runoff and combined sewer overflows into receiving bodies of water. Sustainable urban drainage systems have been developed mainly based on onsite storage and infiltration of storm water, which resemble more natural hydrological processes. Possible technologies include detention/retention ponds, infiltration trenches, grass filter strips, grassed swales, pervious pavement, infiltration basins, green roofs, constructed wetlands, and so on. One advantage of these structures is that they can be integrated well into the urban landscape and provide green and recreational areas.

Rainwater Harvesting

Rooftop rainwater harvesting is the most common technique used in rainwater harvesting. It can supplement water sources when they become scarce or are of low quality. Proper design, operation, and maintenance are needed to guarantee good system performance. Depending on the intended use, water treatment might also be required.

5.5.2 GOOD PRACTICES

Treatment of Storm Water Overflows at the Gorla Maggiore CSO Treatment Plant, Italy

In many European cities, wastewater is collected and conveyed in combined sewer systems where rainwater runoff (storm water) is mixed with domestic sewage or (pre-treated) industrial wastewater. During rainfall, the wastewater volume increases due to the storm water discharged into the sewer. Thus, during periods of heavy rainfall the capacity of the sewer mains can be exceeded and overflows (so-called combined sewer overflow, CSO) are required to discharge excessive wastewater to nearby streams, rivers, or other bodies of water. Thus, without any treatment, this excessive wastewater streams are discharged directly in the receiving bodies of water.

In an Italian case study of the Openness Project (2014, Operationalization of Natural Capital and Ecosystem Services; Meyer et al. 2013) at the Gorla Maggiore CSO treatment, plant natural treatment approaches (vertical wetlands and sand filters) were applied to treat CSO effluent and for providing flood protection (an extensive retention basin) while simultaneously serving for landscape restoration, leisure activities, and biodiversity protection. During the design of the treatment plant, a participatory process was conducted leading to the recovery of an abandoned industrial area and the creation of a water park along the banks of the Olona River. A small flux is permanently diverted from the river for feeding a small pool located at the bottom of the extended retention basin to permit the development of a highly diversified ecosystem that will offer multiple pathways for the removal or control of several pollutants.

Closed Water Cycles for Efficient Water Use in the Christopherus House in Austria

The Christopherus House is an administrative building with retail spaces, studios, storage spaces, and car washing facilities in Upper Austria. Being designed as passive house, efficient resource use is an integral part of the entire building concept. In addition to efficient energy use, this also refers to water use. With a total of 2,000 m² of useful area, the house provides space for fourteen employees and is also used as event venue.

For reducing the drinking water demand in the building, rainwater and treated graywater are used for service water uses (car washing, flushing toilets, and gardening) and restroom installations are equipped with water-saving devices. Graywater is collected at the sinks in the restrooms as well as in the kitchen and biologically treated in a constructed wetland. The graywater treatment unit is integrated into the building (Müllegger et al. 2009).

The Christopherus House has received several awards in Austria and the EU for being a showcase for innovative, sustainable design of industrial and commercial buildings.

5.6 SOLID WASTE MANAGEMENT IN THE CONTEXT OF CULTURAL HERITAGE

(Sandra Lebersorger, Stefan Salhofer, Loredana Alfarè)

The first objective of waste management should be to minimize the negative effects of the generation and management of waste on human health and the environment. Waste management should

also aim at reducing the use of resources. The waste hierarchy defined in Directive 2008/98/EC lays down a priority order of what constitutes the best overall environmental option. First priority is given to waste prevention, which means measures taken before a substance, material, or product has become waste, and that reduce the quantity of waste, the adverse impacts of generated waste on the environment and human health, or the content of harmful substances in materials and products. Prevention is followed by preparing for re-use and recycling, which should be preferred to other recovery; for example, energy recovery and disposal (Directive 2008/98/EC).

Sources of waste generation are consumption and production processes in private households, commercial establishments, businesses, the service sector, public institutions, and industries. Depending on the source of waste generation and the characteristics of the waste, various waste streams can be distinguished such as municipal solid waste, production-specific industrial waste, or construction debris.

A collection system is a combination of the collection method, the container system, vehicles, and personnel. Usually a variety of collection systems have to be used in a community in order to meet local needs and requirements (Bilitewski et al. 1994). Waste can be either collected at the place of waste production (curbside pick-up) or in central locations near the user (drop-off centers also known as recycling banks or recycling centers). Recyclables can be collected by using a separate container for each material or commingled, which requires a material recovery facility. A wide variety of containers are available, ranging from collection bags, garbage cans, wheeled containers, and large-size containers to waste compactors and underground containers.

There are different types of collection methods: simple emptying (a container is emptied into the collection vehicle and then returned), the exchange method, the one-way method (pick up of waste in bags),



JANEZ NARED

Figure 10: Collecting waste in Kotor, Montenegro.

nonsystematic collection (for bulky waste), and the pneumatic method (pressurized air transports waste in underground pipelines). The size and type of collection and transportation vehicles depends on the container systems, payload, topography, and traffic obstructions or limitations (Bilitewski et al. 1994).

As an alternative to the municipal collection scheme, bio-waste can be treated by home composting, which has several advantages. Among other things, residents can use their compost as fertilizer, and the waste quantity in the municipal collection scheme is reduced.

Transfer stations where waste is transferred from collection trucks to larger transportation units might be necessary in order to optimize transport costs to centralized facilities. Sorting facilities are necessary for separating recyclables from contaminants and impurities and for the recovery of single-material streams before materials can be transferred to the recycling process. Wastes that cannot be recycled or residues from recycling have to be treated by composting (e.g., organic waste, yard waste, and green waste), chemical-physical processes (e.g., for batteries, and electric and electronic equipment), incineration, or mechanical-biological pre-treatment.

User fees are an essential element of municipal waste management and are usually charged by waste-disposal agencies for their service: waste collection, waste facility operation, treatment, and disposal. Users either have to pay a flat rate for each unit (per resident or per container) regardless of how much of the service is used (a flat fee system), or they have to pay a flat fee for the fixed share of the costs and a variable fee only for the service used (pay-as-you-throw systems). There are volume-based and weight-based pay-as-you-throw-systems. User fees may be linear (unit and fee rise proportionally), declining (fee per unit decreases with increasing number of units), or progressive (fee per unit increases with increasing number of units; Bilitewski et al. 1994).

The challenges for waste management in the context of cultural heritage are twofold: waste-related problems because of tourism and restrictions for waste management because of heritage protection and restricted space.

Tourism can involve significant additional waste-management costs for municipalities because of additional quantities of waste resulting from board and lodging, major events, tour operators, and leisure and tourist activities. Seasonal variation in tourism and the temporal and spatial concentration of tourists present logistic, ecological, and economic challenges to municipalities. The waste collection system has to be adapted to the demands during the high season and as a result may be oversized for the rest of the year (Ofner 2011). Quantities of separately collected recyclables are often low, with a high rate of contaminants. Overflowing waste containers in parking lots, at bus terminals, and in other public places can be found particularly in places with high numbers of day-trippers and also create a nuisance from an aesthetic point of view. In addition, the problem of littering (carelessly discarding waste into the environment; e.g., roads, public places, parks, open spaces, or woods) can be frequently observed in tourism areas.

In the context of cultural heritage, waste management often has to struggle with restricted space for positioning waste containers in public places as well as on premises, which can conflict with the need of space for separate waste collection. Narrow roads and squares can make the accessibility of collection sites with collection vehicles difficult or even impossible. Waste containers and other waste management infrastructure can cause adverse aesthetic impacts on the appearance of a locality. Nuisances because of odors or noise also have to be taken into account. Conditions of cultural heritage protection have to be considered in planning processes, which might lead to a delay of decision processes, to restrictions, or in the worst case prohibit a technical solution, such as the installation of underground containers in historic city centers (Ofner 2011).

5.6.1 RECOMMENDATIONS

Provision of Smaller Containers and Additional Waste Bags

Smaller containers can be provided to the owners of premises in the historic center, where space is limited, and collection frequency should be increased. Additional waste bags and increased collection

frequency during the high season and at major events is necessary. Paper and cardboard can be collected curbside in form of bundles. Waste bags can be used instead of containers for collecting recyclables from households if space for recycling banks is not available, or also if the roads are too narrow for collection vehicles (Ofner 2011).

Underground Containers

These are emptied by collection vehicles with a loading crane or a suction spout. They have several advantages: because the container is underground except for a small collection shaft, adverse aesthetic impacts are minimized. The high container volumes largely prevent containers from overflowing and reduce contamination of the container location and the effort for cleaning. However, investment costs are higher (an excavation pit is necessary), and conflicts with cultural heritage protection may occur.

Pneumatic Waste Collection

In a pneumatic waste collection system, waste is transported via underground pipelines from underground containers to a waste terminal (Punkkinen et al. 2012). These systems can be an attractive alternative in tourist areas and historic centers because no collection vehicles are needed, in addition to the benefits of underground containers. However, conflicts with cultural heritage protection will occur. Because the costs of installing a pneumatic system into an existing settlement are very high, it is recommended to integrate these systems in the planning stage of new settlement areas.

Sensorized Waste Containers

In the future, sensorized waste containers could be an attractive option for optimizing collection routes and preventing container overflows. Data such as fill levels will be continuously measured by a sensor and transmitted to a control center, and will allow demand-driven emptying of collection containers.

Design of Waste Containers

As for aesthetic aspects, the design of waste containers could be adjusted to the surrounding environment; for example, using more elegant waste baskets, matching the color of collection containers to the surroundings, and so on. However, it must be taken into account that specific colors are often assigned to a specific waste type and that confusing information should be avoided.

Waste Fees

The design of waste fees could provide incentives for source-separation of waste and waste prevention. However, there are conflicting views on the effectiveness of pay-as-you-throw systems (reports of significant decreases of waste quantities versus increases in illegal disposal and littering). In some cities, the fees are based on actual use of waste management services. Residents usually have to pay a fixed fee (according to the size of the housing unit and/or the number of people per household) and purchase additional waste bags, depending on the volume they actually need (Ofner 2011).

Information

Relevant information should be provided to tourists. It could be included in information-flyers, guided tours, or information boards; for example, instructions to avoid littering and how to properly source-separate and dispose of waste. Travel guides could be instructed to include such information in their program. In some areas, it could also be useful to ask tourists to take away the waste they have created. This concept has proved successful for mountain lodges (Lebersorger et al. 2010).

Cleaning Frequency

In order to reduce littering and negative aesthetic impacts, public places and locations of waste containers should be cleaned frequently enough. It is known that the probability of littering is significantly

higher in a place that is already contaminated than in a clean place. Litter signals that the norm of cleanliness has been violated, and it encourages individuals to imitate littering (Haubl 1998; Wüstner & Stengl 1998).

5.6.2 GOOD PRACTICE

Solar-Powered Public Trash & Recycling Containers

Reducing the number of times trash containers are emptied means there is automatically a reduction in fuel, manpower, and equipment maintenance costs to remove the trash. These trash containers can hold five times as much as the same footprint of a traditional can. This aspect is very important for historical sites, where streets are usually narrow and crowded and for this reason reducing the frequency of trash removal is important. The city of Bath (UK), a UNESCO heritage site, has deployed twenty-five solar-powered BigBelly compactors throughout the town (BigBelly Solar Keeps ... 2014).

Bath joins Strasbourg and Salzburg as the third UNESCO heritage site to adopt the system to keep its historic tourist areas free of overflowing rubbish bins. Strasbourg deployed twenty-five BigBelly stations in 2011 and recently decided to expand with an additional twenty-four locations (Volpi 2012).

In all, BigBelly Solar waste and recycling stations can be found in more than thirty countries around the world, including more than fifteen European nations.

The councils will see savings of more than £170,000 each year from operational efficiencies, driven by the additional on-site capacity the compactors provide, as well as the remote monitoring and reporting system that provides real-time data to collection personnel on any device, reducing collection frequency by close to 80%.

The solar-powered bins are produced in the U.S. and then exported and used in several towns in Europe. They are becoming increasingly popular. Each Big Belly unit is equipped with a solar-powered compactor. Unlike standard street bins, when litter is placed into the bin, the compactor automatically compresses the litter, enabling much more waste to be collected in each unit. With a standard bin filling up and overflowing quickly, resources are stretched to their limits, and CO₂ emissions are also extensive due to the amount of collection trips. When the receptacle is full, it sends a signal to a street department monitoring station, alerting it to the need for trash pick-up. It also locks the can so that no more trash can be put into it until it has been emptied. The BigBelly System provides modular components to deploy waste and recycling stations that meet the needs of each location. The compactors bins are increasingly being added to recycling bins in order to cut collection frequency and to double efficiency (Buone pratiche ... 2014).

The Big Belly Solar compactor consists of a British Petroleum solar panel, with a twenty-year warranty, which powers a 12-volt battery, which in turns provides the power for an internal compactor. There are two volume sensors within the bin and, when the rubbish reaches a certain level, the sensors trigger the compactor. Owing to its unique compaction capability, it can hold a minimum of 606 liters of waste, increasing to 800 liters, which is up to eight times greater than the average street bin used by most local authorities.

In the UK, Big Belly compactors are provided on an operational lease at only £21 per unit per week. This can provide each council with an average net operational saving per unit of £77 per week.

Recycling bins connected in a kiosk configuration to the Big Belly Solar compactors provide a better approach for capturing valuable recycling materials. Diverting recyclables from the landfill means lower disposal costs and less landfill material. Capturing recyclable commodities creates a revenue stream. The side-by-side configuration encourages higher recycling rates, which economically benefits each council, school, or park, reduces the burden on the environment, and inspires the general public, students, and tourists to follow the leadership of the local council, university, or tourism site.

Using information technology and solar energy, cities and towns can dramatically reduce how often they need to collect waste and recycling, lowering fuel and labor costs while dramatically reducing their carbon footprints. Those new-found savings can properly staff and maintain public space recycling in a meaningful and ongoing manner (Big Belly Solar Compactor 2014).

5.7 INTEGRATED CONSERVATION OF CULTURAL HERITAGE

(Bojan Erhartič, Maruša Goluža, Giorgia Merti)

The concept of cultural heritage conservation refers to more than measures for the physical preservation of heritage. Its public benefit is much wider and includes integrated heritage conservation (Oven 2007; Koželj 2010).

The concept is based on the idea that the dangers threatening heritage can only be avoided through planned restoration of entire areas, especially old town and village centers, and timely inclusion of these activities in spatial planning. The basic premises of integrated conservation were set out in the European Charter on Architectural Heritage, also known as the Declaration of Amsterdam, as early as 1975. The declaration was legally reinforced by the Convention for the Protection of Architectural Heritage of Europe (Convention ... 1985), which was adopted in 1985 in Granada, Spain. The Declaration of Amsterdam defines integrated conservation as a type of measure whose goal is to ensure the continuity of heritage, maintain it as part of the manmade or natural environment, and use and adapt it to the needs of society. In development planning and measures by the state and local communities, these measures are implemented by including cultural heritage in sustainable development while respecting and taking into account its special nature and social importance (Splošne smernice ... 2013). This document emphasizes the requirement to inform the public of the goals and tasks of integrated conservation and to include as many people as possible in the decision-making processes (Declaration of Amsterdam 1975; Internet 7; Internet 8; Pirkovič 2012, 6–9).

The chief points of the Declaration of Amsterdam include the following (Pirkovič 2012, 6):

- Integrated conservation includes not only the most important monuments, but also less significant heritage and areas as a special category, and the influential areas around the monuments that function as protective zones;
- Areas are protected even though they contain no individual outstanding elements; what matters is that the area as such has heritage value;
- Heritage has spiritual, cultural, social, and economic value, and plays an important educational role;
- The structure of heritage sites (historical town centers and areas) promotes social balance;
- Integrated conservation helps reduce the danger this heritage is exposed to. Integrated conservation is characterized by not only the application of sensitive restoration techniques and the correct choice of appropriate functions, but also a spirit of social justice that takes into account the needs of the entire population, and harmonized preservation and spatial planning. In addition, integrated conservation of heritage sites does not exclude new construction, which follows the requirements of modern architecture, if it fully respects the existing context, proportions, forms, sizes, and scale, and uses traditional materials;
- Integrated conservation is supported by legal, administrative, financial, and technical measures. Financial resources made available for the restoration of heritage should be at least equal to those allocated for new construction. Technical measures are required at two levels: (1) using a sufficient number of experts and specialized firms, and (2) training these experts, while taking into account traditional crafts and other expertise;
- Integrated conservation works to the benefit of everyone, going beyond the personal interests of individual owners.

Measures related to the integrated conservation of individual structures and groups of structures primarily include measures for ensuring the physical preservation of their structural parts, and restoration and other work that improves the condition and identity of these structures.

With regard to heritage sites, the goal of integrated conservation measures is the following (Pirkovič 2012, 7):

- Revival of old structures;
- Ensuring that they are used properly (in which proper use refers to use that may differ from the original use, but retains the structure's dignity and character as a whole);
- Renovating heritage structures, in which they must be restored and adapted to contemporary needs while preserving their heritage values with due care.

Heritage conservation entails measures and actions leading to the protection, preservation, and joint use of heritage. The state and local communities provide the necessary legal protection and carry out specific parts of conservation activities; for example, they allocate budget funds, include conservation in development, spatial, and implementation plans, and promote public accessibility to the heritage (Internet 9). Thus heritage conservation is a constituent part of spatial planning at the global, regional, and local levels. In order to ensure its permanent preservation, heritage must be included in modern life, intended for modern use (revived), and adapted to modern needs (renovated; Pirkovič 2012, 7). Therefore, the concept of conservation must be expanded beyond the protection of selected monuments to also include an integrated policy of conserving heritage sites, especially urban areas and traditional villages.

Suitable spatial development is key here. Its spatial solutions must make it possible to use cultural heritage sustainably to the extent and in a manner that does not cause degradation in the long run or even the loss of the heritage characteristics that need to be preserved for present and future generations. Cultural heritage is a nonrenewable source that requires active use to survive, but only to a certain extent (Splošne smernice ... 2013).

Spatial planning must not treat cultural heritage as a limitation, but rather as a factor of spatial quality, a source of wellbeing, and a development opportunity. With its diversity and quality, cultural heritage represents an important social, economic, educational, and identification potential, which the local community must use to achieve balanced spatial development (Splošne smernice ... 2013).

According to the principle of integrated heritage conservation, »the future of heritage lies in its use. The use of heritage contributes to its preservation, and thus also to economic development and an attractive living and working environment« (Internet 10). Thus the use of heritage is also desirable from the conservation perspective, but only if adaptation to new use is faithful to its historical and architectural character.

Integrated heritage conservation ultimately entails the prudent delegation of conservation-related tasks to various government bodies and local communities, and their cooperation. Heritage owners and other stakeholders (e.g., societies, associations, and NGOs) must be an important and equal participant in making decisions at all levels (Declaration of Amsterdam 1975; Convention ... 1985). Heritage conservation thus mainly concerns citizens. It is successful only if the entire community is aware of the importance of heritage, identifies with it, feels responsible for it, and understands that it is an important part of the environment that determines its quality. Continuous existence of heritage can only be ensured if heritage is made an important part of the built or natural environment, and if it is »actively used, thus benefiting society« (Pirkovič 2012, 9).

5.7.1 RECOMMENDATIONS

Recommendations concerning integrated conservation can be linked to the guidelines defined by the International Charter for the Conservation and Restoration of Monuments and Sites (1964) and the Charter for the conservation of historic towns and urban areas (1987):

To Conserve Monuments, It Is Essential that They Be Maintained on a Permanent Basis

Monuments must be maintained on a permanent basis in order to prevent the adverse effects of degradation processes. Their preservation is facilitated if they are used for some socially useful purpose. Such use is desirable, but it must not change a building's layout or decor.

Conservation of Monuments Must Be Integrated and Also Include the Setting They Are Functionally Connected To

The conservation of a monument should also include preservation of its setting. Wherever a traditional setting exists, it must be retained. Their integrity must be safeguarded and they must be regularly maintained and suitably managed, thus providing conditions for appropriately presenting their value. No new construction, demolition, or modification that might alter the relations of shape, material, or color are allowed.

Preserving the Monument's Authenticity

A monument is an inseparable part of the history to which it bears witness, and of the setting in which it occurs. Moving the entire monument or only part of it is therefore not allowed, except where safeguarding the monument demands this. Restoration must be based on respecting the original material and authentic documents rather than assumptions. Any additions that may prove necessary for aesthetic or technical reasons must be distinct from the architectural composition and must be clearly identifiable.

Inseparable Connection Between Historic Towns and Other Historic Urban Areas, and Coherent Social and Economic Development

The conservation of historic towns and other historic urban areas must be an integral part of coherent policies of social and economic development, and of urban and regional planning at every level. Qualities to be preserved include the historic character of a town or urban area and all those material and immaterial elements that express this character, especially:

- The urban layout as defined by lots and streets;
- Relationships between buildings and green and open spaces;
- The interior and exterior of buildings as defined by scale, size, style, construction, materials, color, and decor;
- The relationship between the town or urban area and its surrounding setting, both natural and manmade;
- The various functions that the town or urban area has acquired over time; any threat to these qualities would compromise the authenticity of the historic town or urban area.

New activities and functions should be compatible with the character of the historic town or urban area. Adaptation of these areas to modern life requires careful installation or improvement of public service facilities, and the improvement of housing should be one of the basic objectives of conservation.

Multidisciplinary Approach to Conserving Cultural Heritage

Conservation programs must be based on multidisciplinary studies that include archaeological, historical, architectural, technical, sociological, geographical, and economic information. Programs should aim to ensure a harmonious relationship between historic urban areas and the town as a whole. Conservation plans should determine which buildings must be preserved, which should be preserved under certain circumstances, and which, under quite exceptional circumstances, might be expendable. It is vital that the conservation plans be supported by the residents of the historic area.

Raising Residents' Awareness about Conservation and Restoration

In order to encourage their participation and involvement, general information on conservation and restoration programs should be provided to all residents, beginning with schoolchildren. In addition, the responsible bodies should encourage the activities of heritage conservation and protection associations and provide funds for restoration and conservation efforts. Specialized training should be provided for all professions involved in conservation.

5.7.2 GOOD PRACTICE

Integrated Conservation of Cultural Heritage, Nafpaktos, Greece

An example of good practice in integrated conservation of cultural heritage would be the case of Nafpaktos (Lepanto). Here, a modern city and its cultural monuments lie intertwined with the diversity of the natural landscape. The Regional Development Fund of the Region of Western Greece in cooperation with the Municipality of Nafpaktos aim mainly to boost the protection, organized management, and promotion of the medieval castle together with the old town and archaeological finds. In particular, efforts and plans are concentrated on maintaining the conservation of the restored castle's complex and its permanent integration with its surroundings and the modern city.

For this reason, the establishment of a 3.5 km culture trail will unite the modern and cultural aspect of the city by connecting the tourism infrastructure on the coast to the medieval castle that crowns the hill above the modern city. It will guide visitors effortlessly from the Venetian port through the old upper city to the uppermost northwestern point of the castle and will lead them through a variety of attractions with both natural and cultural significance to the eastern side of the modern city. In addition, almost unknown archaeological monuments that are not frequently visited, scattered around the city, will be connected by this pathway. Visitors will be able to follow the culture trail from whatever point in the city they might be. It will primarily motivate visitors to shift their main interest and focus from the coastline and maritime activities towards the restored medieval castle, which offers a variety of cultural sights.



BOJAN ERHARTIC

Figure 11: Nafpaktos, Greece.

5.8 REVITALIZATION OF OLD CITY CENTERS

(Nika Razpotnik Visković)

Old city centers are high-quality historical areas in terms of urban planning and architecture, rich in cultural heritage, and at the same time also the most vulnerable urban areas because they are losing their attractiveness (Mihelič 2007). From the outside, this is reflected in poor maintenance or even dilapidated structures, public areas, and infrastructure. Apartments are poorly furnished and are gradually becoming empty because people are moving away. Access to buildings and the traffic arrangements do not meet the current needs of residents. Old city centers are often characterized by noise, polluted air (also due to inappropriate heating systems), inadequate water-supply and sewage systems, and low energy efficiency of buildings. The number of residents is falling and the aging index is rising, which also causes changes in the structure of households. There are increasingly fewer children's play areas and community centers, and increasingly less recreation infrastructure. Small shops and offices are closing down, which also decreases the range of services offered (Koželj 1998; Kasperaviciene 2001; Mihelič 2007; Integrated Revitalisation ... 2008; Radoslav et al. 2013).

The socioeconomic challenges that residents face include deteriorating economic conditions of households, increased unemployment, and lower personal income. Apartments are not in a favorable position on the market because the owners cannot afford to repair them and therefore it is very difficult to market them or their prices are very low. The deteriorated economic situation of the population may be followed by social segregation and vandalism, which is commonly associated with segregation, as well as frequent thefts, burglaries, and other crimes (Integrated Revitalisation ... 2008). This threat can only be »felt« due to the deteriorated reputation of the neighborhood, and so it is not a »de facto« threat, although it still has a negative impact on the area's urban feel.

Development challenges result from the past and present institutional organization, which has not appropriately regulated the management of buildings and public areas in old city centers. The formal regulation of urban development varies by country, but especially in countries in transition insufficient attention has been paid to homeowners' obligations regarding common areas, buildings' exteriors, and appertaining land (Mihelič 2007). Residents have not been adequately included in discussions on identifying and solving issues in their neighborhoods and on the future development of communal activities, which were additionally curtailed when public buildings and facilities (e.g., sports facilities) became privately owned and so the opportunities to use them were reduced.

To a large extent, the deterioration of these areas was also stimulated by postwar reconstruction, which was oriented toward industrialization and urban sprawl. City centers were not part of the main development efforts. Dilapidation and poor maintenance of the building stock on the one hand, and aggressive and architecturally inappropriate development on the other, have completely changed the historical character and urban layout of numerous city centers across Europe (Mihelič 2007; Yung & Chan 2012; Radoslav et al. 2013). Consequently, city centers are losing their central role, identity, and profile, while their cultural heritage is falling into decay.

Revitalization can be defined as bringing functions or life back to a specific area (in this case, old city centers). The concept expresses a duality in terms of time and content or development. It involves the process of stimulating activities that protect the heritage and the past role of old city centers (the prefix re-) and introducing new or additional activities that enable a dynamic future development of urban areas by focusing on meeting the modern needs of residents and visitors (the root vital; Integrated Revitalisation ... 2008). Revitalization goes beyond renovation or redevelopment because it also improves the hygienic and living conditions in old and decaying urban areas through construction and technical measures in order to expand the current functions and introduce new ones to these areas (Mihelič 2007).

Revitalization of old city centers has a number of direct and indirect economic effects on the local community. Deteriorated living conditions in old city centers cause residents to move out, whereas improved conditions retain residents or even attract new ones. Stable or increased settlement also corresponds



JANEZ NARED

Figure 12: Revitalization of city centers is always a complex process. Cetinje, Montenegro.

to a stable demand for goods and services in the city center, which can attract new residents and enable further rehabilitation. The renovation and adaptive reuse of abandoned buildings in the city center (especially for activities that have not found a place there yet) can improve a city's image and profile, thus attracting visitors and investors (Cultural Heritage ... 2007; Rypkema 2008). This is also an opportunity to offer affordable rents to start-up firms that cannot afford the rent in an office park or a shopping center. It has turned out that old buildings in the historic city centers have become »natural« small business incubators with no subsidy of any kind (Bole 2008; Rypkema 2008).

One of the direct economic effects is increased demand for construction and conservation services connected with rehabilitation or reconstruction of urban areas and buildings. For example, the costs of new construction will be half materials and half labor. The costs of rehabilitation will be approximately 70% labor with the balance being materials. This ratio is more favorable to the local economy provided that the labor is performed by local providers (Rypkema 2008). For some of them, regular building maintenance also provides an important long-term source of income.

The economic aspect of revitalizing old city centers is also connected with tourism. Thirty-seven percent of global tourism is related to culture or visits to cultural heritage sites. Tourists that travel in order to see these sites tend to stay longer in an individual place, spend more money, and thus contribute a larger share to tourism revenue (Cultural Heritage ... 2007; Rypkema 2008). Cultural heritage thus promotes the development of additional tourist services, such as hotels, transport, and restaurant services. These activities are also important for the local residents because they themselves can also use part of the tourism infrastructure (Planina & Mihalič 2002). Successful revitalization and rehabilitation of old city centers with historical buildings can also have a positive effect on property values in these areas, which are less sensitive to market fluctuations than property values in new neighborhoods (Cultural Heritage ... 2007).

5.8.1 RECOMMENDATIONS

Recommendations for the long-term success of revitalizing old city centers:

Participation or Inclusion of All Users of a Space

Informing stakeholders of decisions adopted and progress is insufficient; they must be able to take part in making decisions and in developing a vision of future development and the strategy for implementing measures aimed at revitalizing city centers. Stakeholders must be invited to take part in this and a trustworthy partnership relationship must be established with them. To this end, they must be included in the decision-making process from the very beginning. In this, they must be informed of what decisions they can influence. This mainly has to do with following the legislative framework and protecting the public interest, but stakeholders must also know what the project's budget is and what they can actually expect from it.

Information on the Progress of Revitalization Must Be Widely Accessible and Regularly Updated

Providing updates to all stakeholders is key in carrying out a revitalization process. This can be done through websites, social networks, local newspapers, and bulletin boards.

The five groups of stakeholders that must not be excluded from the revitalization process include the following:

The Local Community

Based on its own values, the local community is capable of developing a vision for the development of the local environment and defining its goals. Only when it is included in the decision-making process can it offer its support and assume its share of responsibility, thus creating the social capital required for revitalization to succeed.

Investors

Investors are rarely considered part of the local community even though they belong to it. As a rule, investors pursue the goal of maximizing the return on their investment, which often goes against the long-term development vision as seen by the local community. They are »silent partners« that do not actively help prepare the joint development strategy, but nonetheless have strong influence on its implementation. Therefore, it is important that they become equal partners that are willing to accept the long-term vision of development (of not only economic development, but also social and environmental development) because otherwise the inclusion process is incomplete and the revitalization project cannot succeed.

National and Municipal Bodies and Their Expert Services

These make sure that the procedures are legal and that the decisions adopted agree with the public interest; they set the institutional framework, which, however, often makes it difficult to carry out revitalization measures and does not provide a clear definition of the obligations and responsibilities of individual stakeholders.

Service Providers

These include, for instance, managers of buildings and public areas that are well acquainted with the current state of affairs in a specific area and can propose suggestions for more effective management of buildings and land in the future.

Other Interest Groups and Associations

These represent partial interests; for example, environmental societies, (inter)generational associations, cultural societies, tourism associations, and so on.

5.8.2 GOOD PRACTICES

The Former Mining Town of Banská Štiavnica, Slovakia

The historical development of the Slovak town of Banská Štiavnica was based on silver mining. In the eighteenth century, it was still the third-largest town in the Kingdom of Hungary, but began to economically lag behind in the nineteenth century. The final economic collapse came after 1970. Poor economic and living conditions in the city center caused large-scale emigration and substantial dilapidation of the building stock in the city center. The revitalization of Banská Štiavnica took place for nearly two decades, of which ten years were dedicated to planning and designing a strategy that set out the following steps (Lichner & Breznoscak 2008):

- Protecting heritage by adding the town to the UNESCO World Heritage List. In this way, the town authorities gained better access to national funds for revitalizing the historic center, and addition to the list also helped increase the awareness of the local people and entrepreneurs of the importance of conserving the town's cultural and technical heritage.
- Renovating the monuments and buildings in the historic center, thus providing more space for new activities.
- Renewing and modernizing the technical infrastructure in the historic center and improving the transport conditions to kick-start new economic development and attract new residents.
- Improving the basic housing infrastructure (water supply, bathrooms, central heating, electricity) and establishing the town's social infrastructure, partly in the historical center and partly in its surroundings.
- The development of new economic activities was initially based on providing jobs in civil engineering and crafts, which were needed for the town's renewal, and later on in retail and other services, and education.
- Intellectual renovation in the sense of raising the local community's and visitors' awareness of the town's heritage, and stimulating active participation of individuals in reviving the town's functions, traditional cultural events, customs, and festivals.

The City of Timișoara, Romania

In contrast to the Slovak example, the Romanian city of Timișoara was not renovated because this was not required given the good condition of the buildings and infrastructure; instead, the city focused on attracting new visitors to its historical center. This resulted in improved socioeconomic structure of the population and simultaneous reconstruction of buildings (Radoslav et al. 2013).

The following measures were taken to revive the historic center (Radoslav et al. 2013):

- Re-centralizing the historic center and its immediate surroundings.
Degraded former industrial sites were used for activities that usually accumulated on the city edges in past decades (student housing, shopping centers, business centers, and sports and recreation facilities). This attracted visitors closer to the historic center.
- Using vacant municipal buildings for new educational, cultural-arts, and museum activities, and setting up pedestrian zones and green areas.
This attracted more visitors and private investors that focused primarily on restaurants and retail. Small enterprises received financial stimulation for the next ten years through tax breaks.
- Arranging public areas by including more appropriate traffic solutions, building parking areas on the historic center's edges, and setting up a network of small squares that are especially well-suited for street art activities. The potential for holding cultural and artistic events was also recognized by entrepreneurs, and so many take place in the form of a public-private partnership.
- Linking the historic center to other centers within the city that are also important elements of the urban structure. Promenades and shopping streets make it easier for people to go from one area to another.

5.9 RESTORATION OF HISTORIC BUILDINGS

(Maja Topole, Daniela Dvornik Perhavec, Nika Razpotnik Visković)

In his presentation to the European Cultural Heritage Forum, Donovan D. Rypkema emphasized that preserving cultural heritage provides environmental, cultural, and economic sustainability. He listed five short-term economic impacts of heritage conservation: »jobs and household income, city center revitalization, heritage tourism, property values, and small business incubation.« Rypkema claims that the most important common denominator of failures in downtown revitalization is the destruction of historic buildings. He also highlights that »if cities are to succeed in economic globalization, they will have to be competitive worldwide.« They will be competitive if they foster both economic and cultural globalization, preserve their identity and individuality, and make use of the special features that give them an advantage over similar cities. Their cultural heritage will play a central role in this. Taking proper care of it ensures social stability and continuity. Thus this is not about deciding between economic development and heritage, but about utilizing a city's historic environment as effectively and sustainably as possible in order to meet its economic, cultural, and social needs (Rypkema 2005).

The need to restore buildings also arises from changes in people's needs to improve buildings' functionality, energy efficiency, and esthetics, and to establish appropriate living conditions. Cultural heritage restoration requires a solid knowledge of the design and construction materials used in historical buildings, the typical construction techniques used in individual historical periods, and various construction techniques, procedures, and materials required for the restoration. Experts that plan, carry out, and order restoration also play a key role in this, as do suitable training programs intended for these experts.

From the technical viewpoint, damage to buildings can appear on:

- Construction elements (superstructure and envelope); and
- Non-construction elements or equipment.



JANEZ NARED

Figure 13: Restoration of the Temple of Apollo in Epikourios, Greece.

Various factors cause buildings to decay (Deu 2004; Uranjek 2008, 2011; Bergant & Dolinšek 2013; Nedog 2013). Water, wind, the sun and other forms of radiation, and air pollution have an adverse effect on them. Damage is also caused due to subsiding foundations because of poor ground carrying capacity, aging construction materials, and natural and other disasters. In addition, buildings become dilapidated because of:

- Inadequate maintenance (due to financial reasons, incompetence, and negligence);
- Amateur changes to their design and construction materials (unfamiliarity with the typical construction techniques used in a particular historical period);
- Overloading the building when changing its function or using it improperly;
- Construction errors.

The construction phase of historical restoration project is basically similar to the construction phase of new construction projects; the only difference is that in restoring historical buildings a larger number of experts and artisans need to be involved. However, both cases use similar project delivery systems. The system used in new construction mainly includes technical disciplines (architecture, geodesy, electrical engineering, mechanical engineering, and construction), whereas the system used for restoring historic buildings involves the humanities and the social and natural sciences (Dvornik Perhavec 2010).

Due to the principles used in individual stages of construction projects and the systems' features, such as analysis, synthesis, and decomposition, individual project stages can be defined as elements of the system. A project can be understood as a series of tasks and activities, each of which must be completed before the end of the project. Every project has its own structure that divides the project into subprojects with partial objectives (Lončarič 1995). The final objective is reached by combining subprojects and partial objectives within a specific time period. Research literature (Construction Extension ... 2007) defines the following four phases of a construction project:

- Concept;
- Planning and development;
- Detailed design and construction;
- Start-up.

Due to the project structure, it is expected that the entire construction project be treated as a determined system (determined through price, deadline, and quality of the work performed). The main characteristic of determined systems is their determined structure and predictability. However, when it comes to restoring historic buildings, other factors affect and change the determined system (Dvornik Perhavec 2012). The system is influenced by previous phases that change it into a stochastic system. There are primarily two reasons for stochastic behavior of a system (Mulej & Potočan 2006):

- A determined system is exposed to external stochastic impacts; and
- The system's internal mechanisms change for supposedly stochastic reasons.

Any instance of stochastic behavior involves uncertainty, which generally means that no previous knowledge or notifications are required to complete a task. When various types of uncertainty are encountered in systems' management, experiential learning can be used to solve the issues at hand.

5.9.1 RECOMMENDATIONS

Technical Procedures before Restoration:

- Identifying the building's structure and architectural design;
- Identifying its original function;
- Taking samples of the materials and binding agents for laboratory tests;
- Determining the building's physical condition and the stability of its construction elements (foundations, walls, beams, floors, and the roof);
- Drawing up detailed technological guidelines for designing a restoration project;

- Designing the project with static calculations (protection against earthquakes) and maintenance instructions;
- Harmonizing conservation principles with the requirements of modern standards and technologies, or obtaining consent and, if necessary, assistance from the monument conservation institute and other services.

Selection of Materials

Historic buildings were constructed with exclusively natural materials (stone, brick, and wood), and natural polymers and active pozzolans as the binding agents. These materials have a limited binding ability and are sensitive to atmospheric changes. When restoring these buildings, the material used must be highly porous (to allow the evaporation of water and deposition of salt), its mechanical properties must be compatible with the original material, it must not be sensitive to aggressive environmental impacts (extreme climatic conditions with temperatures moving above and below zero, pollution), and must not react with the substances in the wall. For example, cement, which has only been used for the past two centuries, is not a suitable binding agent for restoring old buildings because it causes chemical reactions and is not sufficiently porous. Traditional lime, hydrated-lime, and pozzolan-based binding agents are more suitable, but even they cannot resist all types of environmental impacts.

Careful Restoration of Facades

The facade is one of the most important elements of a building because it expresses its character and significance. The analysis of an individual building's properties primarily includes the facade composition (its vertical and horizontal elements, the layout of windows and doors, and the ratio between the supporting and supported elements).

These components must be conserved and restored in the original forms, sizes, details, materials, and colors, taking restoration principles into account. Only if they are damaged too severely can they be replaced with detailed replicas created on the basis of relevant documents. The requirements concerning the sides of the buildings facing the street are especially strict.

Restoration of the Interior

In conserving the interior of cultural heritage structures, special attention is dedicated to architectural and decorative details, and the furnishings in the shared areas (e.g., the main door, doors to individual apartments and auxiliary areas, staircases and lobbies, stair railings, sculptures and paintings, commemorative plaques, original lights, doorbells, and mailboxes). When installing fixtures, the common areas should be left as intact as possible. It is permissible to adapt the apartments to new living standards, but the original sculptures, paintings, plaster decor, old tile stoves, flooring, and other furnishings from the time the building was constructed must be preserved.

The Importance of Raising Awareness

Monument conservation institutes, restoration centers, universities, secondary schools, extension schools, museums, and construction centers play an important role in raising people's awareness of responsible heritage management. They hold permanent and temporary exhibitions, arrange promotion and education, and organize seminars, workshops, and conferences on maintaining, restoring, and appropriately developing cultural monuments. Only general awareness of and respect for the principles of integrated architectural heritage conservation, norms, and value bases (including international documents) will mitigate past mistakes and reestablish the connections between architectural heritage and the current development of built structures.

5.9.2 GOOD PRACTICE

The »Lost Vilnius« Program, Lithuania

The Old Town of Vilnius has always played an important role in the culture and economy of Lithuania and Vilnius. It suffered some important losses during the Second World War, and so during the post-war period the conservation of cultural heritage was recognized as a necessary condition for the preservation of Lithuanian cultural identity. The restoration of significant cultural sites revealed damaged historical elements. In addition, parts of valuable buildings (churches, palaces, etc.) were not being used for their original purposes, which lessened their authenticity. In Soviet times all property was state owned, and people thus became unused to taking responsibility for maintaining their buildings, even if they were valuable heritage objects. Likewise, the government did not allocate enough resources for housing maintenance and repairs. After privatization in the 1990s, the process of establishing homeowners' associations was very slow due to ineffective legal regulations, a lack of supportive incentives, and the voluntary nature of such associations. This resulted in further ongoing decay of historical buildings (Raugaliene 2008).

These conditions significantly changed after the Old Town of Vilnius was added to the UNESCO World Heritage List in 1994. A revitalization strategy for Vilnius' Old Town was prepared in 1995–1996. The Vilnius Old Town Renewal Agency (OTRA) was established in 1998 as the main instrument for implementing the revitalization strategy. The first Vilnius Old Town Revitalization Program was prepared and implemented in 1998. This program financed investigation and design as well as renewal of facades and roofs of Old Town buildings. It was thus possible to restore authentic heritage details, but in many cases the renovation work was done with modern materials (e.g., cement mortars and synthetic paints) that conservation specialists would normally refuse to use (Raugaliene 2008).

For this reason, a sub-program called »Lost Vilnius« for preserving authentic heritage structures or their elements as well as reconstructing the most significant historic structures was established and, with its implementation in 2002, a new qualitative phase of the Old Town Revitalization Program began. One of its most acclaimed successes was the reconstruction of several wooden buildings in the Old Town and the New Town (Naujamiestis) by taking measures to restore decorative elements of the building facades following technical protection standards (Raugaliene 2008).

5.10 SUSTAINABLE MANAGEMENT OF CULTURAL LANDSCAPES

(Matija Zorn, Nina Juvan)

A cultural landscape consists of various natural and social components or elements and their relationships, connections, and mutual impacts (Urbanc 2002). Natural elements include relief (e.g., elevation, slope, surface aspect, and genetic and morphological relief types), climate (e.g., precipitation, temperature, insolation, and microclimate), hydrological and pedological elements, and vegetation. Social elements include economic features (e.g., land use, field division, and industrialization), population and settlement features (e.g., types of settlements, houses, and farms), and communication elements (e.g., traffic routes; Urbanc 2002). Because people's activities and social pressures change over time, this also changes the characteristics and patterns of cultural landscapes. Precisely because of this, it is more difficult to prepare a typology of cultural landscapes than a typology of natural landscapes. Classification must take into account both primary (natural) and secondary (manmade) landscape elements because they both influence the appearance of today's cultural landscapes (Lipský & Romportl 2007).

According to the Convention Concerning the Protection of the World Cultural and Natural Heritage (1972), the European Landscape Convention (2000), and new approaches and strategies concerning



BOJAN ERHARTIČ

Figure 14: Traditional pastures in Velika Planina, Slovenia.

nature parks in the UK, France, and Germany, cultural landscapes in general and especially protected landscapes should also be treated as building blocks of promoting sustainable spatial development (Janssen & Knippenberg 2012). Sustainable development of protected landscapes requires a shift from maintenance to development. Thus landscape conservation strategies protect not only the natural and cultural heritage of cultural landscapes, but also increase the dynamics of the region, which begins to strengthen its (weakened) territorial assets, such as regional identity and natural environment. Identity is strengthened through shared historical foundations, special landscape features, typical products, tradition, and innovative projects. This results in cultural landscapes that have a direct impact on individuals' social welfare, while also driving urban and rural development. They are part of the region's capital and form the basis for the development of rural communities. National parks, geoparks, ecomuseums, and landscape parks show the true importance of sustainable development, bringing together the natural environment, people, heritage, tourism, and culture (Janssen & Knippenberg 2012).

In order to plan a landscape's development, it is vital to know its structure and main distinctive elements in great detail. This ensures its long-term recognition and identity (Kladnik, Perko, & Urbanc 2009). A cultural landscape changes constantly, and in planning its management it is therefore vital to find a balance between planning changes and conserving the landscape.

In general, factors influencing cultural landscapes can be divided into three categories: natural, economic, and social factors (Rigol 2006). In terms of natural factors, soil erosion, disappearance of forests, and air and water pollution present the greatest threat to cultural landscapes. Sometimes the size and geographic location of cultural landscapes alone can pose a great threat to their existence (e.g., the small size of individual islands that are consequently more sensitive to environmental changes). The most common consequence of these factors is reduced biodiversity and a negative impact on sustainable development. This may lead to uncontrolled development of tourism, industry, and infrastructure (Rigol 2006). In terms of economic factors, the main threat to the cultural landscape is a lack of funds

and investment in the development and protection of cultural landscapes. This category also includes speculating in property and buildings (Rigol 2006). Social factors include poor living conditions, such as unemployment, poor education opportunities, and poor availability of other public services. This can cause the native population (especially young people) to move away (Rigol 2006).

There is an increasing call for directing special attention to degraded landscapes (Zorn & Komac 2013), which have become like this mainly due to intensive land use. Globally and especially in Europe, one can find three approaches to managing cultural landscapes (Bruun 1999):

- The laissez-faire approach is the most widely used approach in managing rural landscapes in Europe. Management standards are set through competition, which is the main feature of a free-market economy. This approach does not have any special aspirations for cultural heritage conservation or tourism development. It is characterized by abandoning marginal farmland and introducing extensive farming;
- The conservation approach, which aims to conserve biodiversity and cultural heritage. This approach often interferes with the interests of farming communities and does not take into account that a cultural landscape is part of a wider economic and social system;
- The sustainable or renewal approach, which takes into account biodiversity, natural balance, and cultural heritage values on the one hand, and economic and technological development on the other.

Recently, tourism has become a force with the greatest »ideological charge« for protecting and managing cultural landscapes in the direction of sustainable development (Taylor 2012).

Unfortunately, the sustainable approach to managing cultural landscapes, which has been increasingly placed at the forefront over the last decade, is often implemented only in theory rather than practice. It can be found in numerous international and national conventions, and an increasing number of these elements have been included in national and international legal documents. However, UNESCO establishes that it is easier to involve local communities in managing cultural landscapes by presenting principles and values than through regulations (Mitchell & Buggey 2000). It has turned out that cultural landscape conservation has been more successful in regions that took into account the values, priorities, needs, concerns, and aspirations of the local population (Mitchell & Buggey 2000).

Countries that seek to promote the sustainable development of their cultural landscapes can use a top-down or a bottom-up approach. The top-down approach involves government activities, the most typical of which are protection (declaring national and landscape parks) and financial incentives for farmers and other landscape managers. The bottom-up approach involves activating the local population in building networks to serve as the bearers of cultural landscape development. However, establishing these types of networks also often requires government funding (Herlitzius et al. 2009).

In planning cultural landscapes oriented toward sustainable development, is it advisable to strengthen the »virtual circle« in the cultural landscape that will connect the landscape, community, and economy. In a post-industrial society, these connections are no longer balanced and therefore government interference is often necessary in order to make the stakeholders use practices that increase rather than undermine the visual and natural features of the cultural landscape (Selman 2004).

5.10.1 RECOMMENDATIONS

Removing Obstacles at Various Levels

The most common obstacles encountered in managing cultural landscapes include a lack of agreement on the most effective direction of operations, inappropriate models, inappropriate selection of indicators based on which decisions are made, limited technical expertise in mitigating impacts and reestablishing the prior state after an extraordinary event (e.g., a natural disaster), the brief terms of politicians, and financial aspects of sustainable measures. Therefore, in planning the management of cultural landscapes such obstacles that occur at various levels – including communication, expertise and skills, technology, economics, society, and politics – must be removed. This can be done through agreement, improving expertise and skills, technological improvements, seeking long-term economic

effects, raising public awareness, and adopting administrative documents that will have a long-term effect (Selman 2004).

Integrated, Multidisciplinary, and Participatory Approach

This kind of approach can only be ensured by appropriate inclusion of all (groups of) stakeholders in the landscape, who should (Vos & Meekes 1999):

- Create a list of priorities for sustainable protection of important cultural landscapes;
- Create a list of the main activities for managing cultural landscapes;
- Develop a strategy for increasing the economic impact of multifunctional use of cultural landscapes by including primary production, recreational opportunities, healthcare, and other secondary functions;
- Develop proposals for increasing cultural identity in individual cultural landscapes; for example, by connecting local special cultural features (architecture, art, and tradition) with regional environmentally friendly products;
- Develop strategies for various areas: museum areas; areas in which old functions of cultural landscapes should be transformed or replaced by new ones; areas in which multifunctional use of the landscape is being introduced; and areas that should be left unchanged;
- Develop mechanisms that will help formulate new policies (monitoring systems, development scenarios, establishing a system of experts to help implement policies, and research support systems to aid decision-making).

Establishing a Connection between the Cultural Landscape, Local Community, and Economy

This can be achieved in several ways. One way is to produce safe food, market it in local stores, and increase the profile of these products. The public is increasingly prepared to support farmers that manage landscapes such that they form a visually attractive image of the countryside. Afforestation is also in the public interest because the social function of forests is being increasingly highlighted, as is the importance of integrated management of water resources. Due to a combination of extensive occasional floods and summer droughts, increasingly more water management enterprises have begun introducing more natural technologies for acquiring water and building more sustainable water-supply systems in urban centers (Selman 2004).

5.10.2 GOOD PRACTICES

Conservation of Semi-Natural Pastures in the Culm Grasslands, UK

The Culm Grasslands in Devon, UK, is dealing with the problem of losing its semi-natural pastures. The following barriers and solutions have been identified with regard to measures to reverse this loss (Selman 2004):

- **Communication**
Barrier: poor communication and coordination, uncertainty over objectives, unclear responsibility for surveying certain areas. Solution: establishing partnerships among all stakeholders, carrying out specific actions to revitalize the landscape.
- **Knowledge**
Barrier: marginal sites unknown, advisors' lack of familiarity with key farming issues, gaps in habitat-management knowledge. Solution: improved inventory of semi-natural grassland sites.
- **Technology**
Barrier: lack of habitat-restoration techniques, non-availability of appropriate grazing livestock. Solution: introducing indicative planning and habitat-restoration techniques.

- Economic
Barrier: insufficient availability of special government grants to promote environmentally friendly farming. Solution: improvements in securing government funds.
- Social
Barrier: negative owner attitudes towards advisors, use of farming techniques for achieving instant results, ownership changes, limited public awareness. Solution: advisors began to familiarize themselves with farmers' problems (visited the farms several times); issuing special publications; holding events and talks for farmers.
- Political
Barrier: strict BSE-related laws on livestock sales. Solution: restructuring of activities, including adoption of a special protocol for flax growers.

»Greenways« along the Rivers and Canals between the Italian Provinces of Milan and Pavia

Another best-practice example is »greenways« along rivers and canals that perform several functions: the green corridors or ecological networks maintain biodiversity, improve water quality, and provide areas for fauna and flora to grow and thrive. In addition, greenways connect people with natural and other landscape resources, and serve as recreational areas. If they are appropriately planned, potential conflicts between people and nature are minimized. For example, these types of greenways were designed in the area on the borders of the Italian provinces of Milan and Pavia, which is strongly influenced by agricultural use. They were built along the historical twelfth-century canals surrounding the city of Milan (Fumagalli & Toccolini 2012).

5.11 CULTURAL HERITAGE AS A BRAND

(Janez Nared, Matjaž Geršič)

»A brand is the set of expectations, memories, stories and relationships that, taken together, account for a consumer's decision to choose one product or service over another. If the consumer (whether it's a business, a buyer, a voter or a donor) doesn't pay a premium, make a selection or spread the word, then no brand value exists for that consumer« (Internet 26).

A brand is a product, service, or concept that is publicly distinguished from other products, services, or concepts so that it can be easily communicated and usually marketed (Parcanschi 2010). Brands evoke various associations in consumers, and so a strong emotional relationship can develop between them and the brand over time. Consumers perceive brands as bearers of a specific value, which means that positive associations are a guarantee for the brand's market success (Pucelj 2013).

Brands are distinctive signs that are protected in line with conventional law, and as a special legal category they are placed within the substantive framework of intellectual property (Puharič 2001, 209–220). A brand refers to goods or services of known origin. The name of a brand has many associations in people's minds, and these make up the overall brand image (Kotler 2004, 11). Associations are anything linked to a brand in the user's memory. However, they also entail a level of power: the larger the number of experiences and the greater the users' openness to communicate, the stronger the link with a brand. In addition, associations are stronger when they are supported by a network of other links, which can be defined as an association node (Aaker 1991, 109–113, cited in: Hrastelj 2010, 2). A brand's association node means that the brand evokes many associations in the user's consciousness, which in turn give rise to even more association links. Associations may reflect individual properties of the brand. There are many ways in which associations linked to a specific brand create important value for both the buyer and the company (Chen 2001, 440–441, cited in: Hrastelj 2010, 2).

The most characteristic skill of marketing specialists is their ability to design, maintain, protect, and strengthen brands, which are defined as the art and the basis of marketing. The American Marketing Association defines a brand as a »name, term, sign, symbol or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of other sellers.« Marketing specialists claim that a brand is a complex symbol that can communicate up to six levels of meaning: features, benefits, values, culture, personality, and user (Kotler 2004, 418–419).

It is not only about the external appearance, but also the content that is hidden at first glance. A brand's multifaceted nature can be compared to an iceberg. The logo and the name make up the visible part, and the values, intellect, and culture make up the hidden, invisible part of the branding iceberg (de Chernatony 2002, 23, cited in: Kuštor 2008, 3).

The development of a brand's identity requires additional decisions on the brand's name, logo, colors, slogan, and symbols (Kotler 2004, 420). Branding products and services presents various challenges to the marketer. Decisions on whether to use a brand on the market at all, on finding sponsors, and on the brand's name, strategy, and repositioning are of key importance (Kotler 2004, 425).

The majority of brands are linked to everyday consumption. However, landscapes, cities, and individual buildings can also have a similar symbolic value. This is important from the viewpoint of destination management and culture heritage management because, thanks to its exceptional values, cultural heritage is widely known and can contribute significantly to promoting an area or improving its marketing.

This gave rise to the concept of a territorial brand, which can be understood as a destination management product. There are several definitions of destination management. The generally accepted view is that it involves complex management of tourism in a specific geographical area, in which tourism is an important industry (Brezovec 2004, 2). The destination must be set up as a strategic business unit. Only if it is managed professionally can it present an independent and high-quality brand. Supra-regional sites, special farm products, and so on should be linked to the destination (Ovsenik 2003, 63). Destination management functions include planning, development, preservation, marketing, and business operations. Its main goals are environmental protection, sustainable development, profitability, and quality standards. To avoid conflict between these goals, it is vital to have a clear vision, to include the stakeholders, and to coordinate their operations in managing a specific destination in order to achieve comprehensive development of tourism. Stakeholders can be included in a public or private organization whose main purpose is to manage and coordinate (Brezovec 2004, 2).

Sue Warren highlights the importance of a brand and its six dimensions for effective destination management: people (those living at the destination), icons (visual attraction of the destination), entrepreneurs (tourism providers), individuality or authenticity of tourism services, and discoveries (new destinations and stories; Brezovec 2004, 2).

Cultural heritage can play a multifaceted role in shaping brands. Namely, cultural heritage performs many functions (i.e., educational, identifying, cultural, social, economic, etc.) and can thus play several roles:

- Using cultural heritage as a brand for a specific country, region, city or town (can you imagine Paris without the Eiffel Tower or Sydney without its picturesque Opera House?);
- Using cultural heritage sites as a brand for a specific commodity / private companies (e.g., a sixteenth-century Norse woodcut as a basis for the Starbucks logo);
- Using traditional skills and cultural heritage for producing a specific typical regional product (examples of living heritage such as Idrija bobbin lace and White Carniolan Easter eggs).

In any case, cultural heritage has great value for other industries and provides environmental assets for various forms of utilization. Businesses, for example, exploit cultural heritage in marketing, promotion, and reception activities. Cultural landscapes, townscape, individual sites, and buildings are used for the film and television industry. In the tourism sector, cultural heritage is a main attractor and sup-

port for backbone activities such as hotel accommodation, transport, and catering. Branding of products, regions, and localities is thus often based on cultural heritage (Nypan 2008, 59–60).

There are many examples of how a place's natural and cultural heritage may be used for brand building and identity construction. For example, the Faroese project Competitive Identity has examined how to project a national image in a globalized world. As part of a brand identity for the islands, eco-tourism is a major driver of business development (Natural and Cultural Heritage ... 2011). Similarly, the European Cities of Culture campaign, with its strong emphasis on destination branding, has been partially successful in this way and has acted to endorse the idea that culture, heritage, and the arts are central elements in attracting tourists (Robinson 2008, 19).

Because brands are usually protected from use by others by securing a trademark or service mark from an authorized agency, usually a government agency (Parcanschi 2010), there could be a problem if cultural heritage is used for branding purposes of private companies or commercial products, bearing in mind the universal value the property has and the question of ownership in the case of cultural heritage. Therefore, cultural heritage seems to be more applicable to community-based common brands, whereas networking and packaging, joint promotions, and brands involving the regionalization of a place are among the policy solutions to problems of competition (Ashworth 2008, 57–58).

5.11.1 RECOMMENDATIONS

These recommendations for branding of cultural heritage are based on the guide *The Power of Branding* (2013), which highlights the following elements for brand creation:

The Big Idea

In this step the main focus should be placed on what makes you different, what you offer, why you are doing it, and how you are going to present it. The big idea is also a uniting concept that can hold together an otherwise disparate set of activities. Ideally, it will inform everything you do, big or small, including customer service, advertising, a website order form, corporate identity, and so on. To achieve this, you must reflect on your position, what you offer, what makes you different, what your strong points are, what your personality is, what your current and prospective customers want or need, what their habits and desires are, and whether there are any gaps in the market.

With answers to these questions, the articulation of these ideas can be implemented through branding techniques such as design, advertising, events, partnerships, staff training, and so on.

Vision

The vision of development, management, and marketing of cultural heritage should be part of a management plan and widely used for all other purposes, including branding. Generating a vision for your area or property means thinking about the future, where you want to be, and looking at ways to challenge the market or transform a sector. A well-considered vision can help you structure some of the more practical issues of putting a development strategy into action. If you are clear on what you are aiming at, it is obviously easier to put the structures in place to get there. In this regard, it is of crucial importance that the vision be shared by all the stakeholders.

Values

The values reflect what you stand for and in most cases they are the following: quality, openness, innovation, individual responsibility, fairness, respect for the individual, empowerment, passion, flexibility, teamwork, and pride. It is not easy to communicate values: overt marketing may seem disingenuous, whereas not communicating your values in any way may result in people not seeing what you stand for.

Personality

Personality depends on how the big idea, vision, and values are communicated to the public. It is connected to tone, language, and design. It may be efficient and businesslike, friendly and chatty, or perhaps humorous and irreverent.

Here are a few examples of how you can start to control the elements of your »personality«:

- **Graphic design:** The visual identity: hard corporate identity or soft, friendly caricature?
- **Tone of voice:** Is the language you use (both spoken and written) formal or relaxed?
- **Dialogue:** Can your users or customers contribute ideas and get involved in the organization? Or is it a one-way communication?
- **Customer service:** How are staff trained to communicate with customers? What level of customer service do you provide?

When it comes to communicating your brand to the public, there are a few techniques and issues that are worth considering:

- **Storytelling:** An established technique in branding is to tell a story through communication elements such as corporate identity, packaging, stationery, marketing materials, and so on.
- **Credibility:** The credibility of your brand's offer must also be solid.
- **Differentiation:** A great deal of branding is about defining and presenting a point of differentiation in the sector you are operating in. Get this right and your organization will stand out brightly against your competitors.
- **Engaging with customers:** Part and parcel of creating differentiation is engaging with your customers or users. If you stand out of the crowd for positive reasons and your tone of voice and communication are credible, customers will look at what you have to say.
- **Focusing your product portfolio:** Think carefully about the best way to present what you offer, even if it means setting things up differently from your internal organization.
- **Multiple brands and brand »stretch«:** If you operate in more than one sector you will have to consider how you present the business in each area: either to have a single brand identity that is applied to sub-brands for the areas you operate in, or to develop a completely distinct brand for the different sectors you want to operate in.
- **Endorsed brands:** This is where you create a new brand in its own right but allow the »parent« brand to feature as an endorsement of the new brand.
- **Reinvigorating your brand:** It is of vital importance to refresh the brand and to adapt it to new trends, perspectives, and so on.
- **Naming:** Brand names are an important aspect in setting the tone and personality of your brand, as well as being a key element in marketing activity. Along with design and tone of voice, a name can be a means of differentiation and should reflect the overall brand strategy you have developed.

5.11.2 GOOD PRACTICE

Restoration of Windmills in Saaremaa, Estonia

A typical vernacular architecture feature in Estonia, especially in Saaremaa, is windmills, built of stone and standing on a high base. In the nineteenth century nearly each major farm on Saaremaa and Muhumaa had its own windmill (Tourism ... 2014). In 1890 there were over 1,200 windmills on the island of Saaremaa in western Estonia, but the number shrank considerably when electricity became widespread. Today only a few dozen are left and only about twenty function (Eppich et al. 2013; To Saaremaa ... 2014). Although there are not many such windmills left in Saaremaa's landscape, they are considered one of the most important symbols of Saaremaa (Tourism ... 2014). Today they are at a critical level and without support they will eventually perish (To Saaremaa ... 2014). For this

reason, people have started to rebuild the windmills because they are an important part of the local culture. The windmill is also an essential symbol of the Saaremaa vodka brand. It can be found on the front label of the bottle and also as an element in advertising materials. Saaremaa vodka joined hands with the Saaremaa Tourism Development Center in 2013 and started to contribute to the renovation and maintenance of these important historic monuments on Saaremaa Island (Our Team ... 2014). By subsidizing the renovation of the windmills, the company is becoming more involved with the local community, strengthening the island's heritage, and helping preserve the uniqueness of Saaremaa Island and the craft of windmill construction, an ancient skill still practiced in Saaremaa (To Saaremaa ... 2014; Altia ... 2014).

The good practice from Saaremaa involves private funding of the conservation of these important symbols of the island, ensures sustainability of funding for the windmills, and provides an opportunity for increased funding in the future (Eppich et al. 2013).

In April 2013, Altia began sponsoring full restoration of the Pihtla Windmill, which has been turned into a bird-watching station with accommodation for ornithologists, and supporting renovation of the Leedri Mill, the traditional centerpiece of the local community's Midsummer celebrations (Altia ... 2014; Preserving ... 2014).

The next windmill to be rebuilt in 2014 will be the Ilaste Windmill. The Ilaste Windmill stands in the village of Kuusnõmme on Saaremaa Island and originally dates from 1891. It operated for 100 years; the last miller, Ilaste Sander, worked at the windmill until the beginning of the 1980s. The windmill is located in Vilsandi National Park and in an attractive place for tourists. Inside it, an exhibition will be open about the life and writings of the Estonian writer Aadu Hint, who lived in a village near this windmill, and about the life of local villages (In 2014 Saaremaa ... 2014).

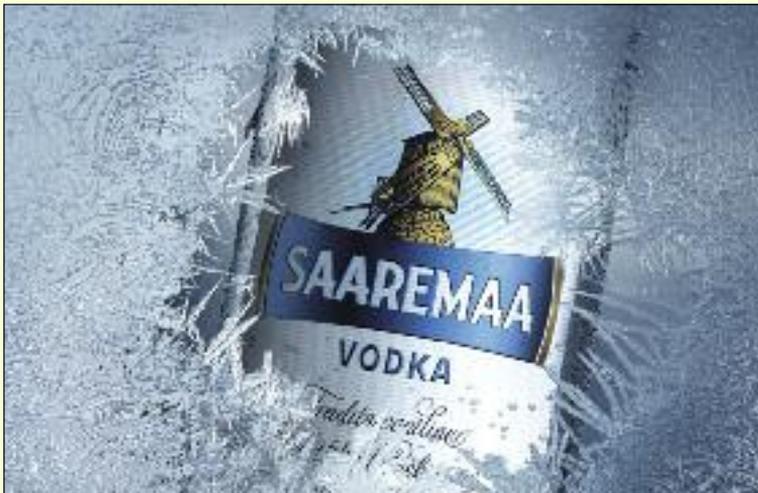


Figure 15: The Saaremaa windmill as a brand.

The Ilaste Windmill was chosen from twenty-one candidates, applications for which were sent to Altia Eesti AS. Altia's decision was made in favor of the Ilaste windmill because the owners had a strong vision about the windmill and the local community was very active and supportive towards taking good care of the windmill in the future and showing it to tourists and travelers passing by (In 2014 Saaremaa ... 2014).

5.12 CULTURAL HERITAGE AND NATURAL DISASTER RISK PREPAREDNESS

(Matija Zorn, Blaž Komac, Massimiliano Moscatelli)

»Natural disasters refer to natural phenomena and processes in a landscape that affect society to such an extent that they cause damage to it« (Zorn & Komac 2011, 16). This also applies to cultural heritage. The interrelation between cultural heritage and natural disasters can take different forms; for example, (1) natural disasters damage or destroy cultural heritage, (2) some cultural assets have become important elements of cultural heritage due to past natural disasters and the history of their destruction (e.g., the destruction of the Roman town of Pompeii), and (3) accounts of ancient natural catastrophes have become part of cultural tradition (e.g., the story of the disappearance of Atlantis). Adequate protection of cultural heritage against natural disasters is a major challenge (Migoñ 2013, 136).

Cultural heritage can be affected by both endogenous natural processes (e.g., earthquakes and volcanic eruptions) and exogenous ones (e.g., landslides, floods, and adverse weather conditions). These are processes that can be catastrophic and for which (at least for the exogenous processes) no predictions were available before the twentieth century. In addition, cultural heritage is also threatened by long-term processes, whose impacts accumulate over a lengthy period of time; for example, ground subsidence, cliff retreat, accelerated weathering of construction material and decorative stone, and sandstorms (Migoñ 2013, 136). There are also many examples of damaged cultural heritage due to inappropriate disaster management (Protecting ... 2007, vi).

The need to protect cultural heritage from natural disaster is defined in several international documents (Meier, Petzet, & Will 2008, 214, 217); for example, The Convention Concerning the Protection of the World Cultural and Natural Heritage (1972), Recommendation No. R (93) 9 of the Committee of Ministers to Member States on the Protection of the Architectural Heritage against Natural Disasters (Recommendation ... 1993), The Radenci Declaration on the Protection of Cultural Heritage in Emergencies and Exceptional Situations (The Radenci ... 1998), The 2005 Kyoto Declaration on Protection of Cultural Properties, Historic Areas and Their Settings from Loss in Disasters, Document on reducing risks from disasters at world heritage properties, adopted at the thirtieth session of the UNESCO World Heritage Committee (World ... 2006), Declaration on the Impact of Climate Change on Cultural Heritage (International ... 2007).

Destruction of cultural heritage in older historical periods, such as those described in religious texts, are connected with a certain degree of doubt (Migoñ 2013, 136). Probably the most illustrative example provided in the Bible is the destruction of Sodom and Gomorrah (cf. Zorn & Komac 2007, 100–102).

There have been volcanic eruptions that destroyed entire cultures. The eruption on the island of Thera in the fifteenth century BC indirectly (via a tsunami) contributed to the demise of the Minoan civilization on Crete (Haddingham 2008). It is also said to have caused the disappearance of Atlantis (Tschoegl 1972). Pyroclastic flows are known to have a more local impact; for example, they destroyed the cities of Pompeii and Herculaneum in the eruption of Mount Vesuvius in AD 79. Lava flows have a similar impact; for example, in the first century AD they destroyed the religious center of Cuicuilco in what is today Mexico City (Migoñ 2013, 136).

The demise of certain cultures, such as the Mayan civilization in Central America (eighth to eleventh centuries) or the Vikings in Greenland (thirteenth to fourteenth centuries), is connected with climate changes (Diamond 2007). The decline of the Maya was also connected with accelerated erosion (Beach et al. 2006).

The »concept of cultural heritage« was already known in Antiquity, when the idea of the Seven Wonders of the Ancient World was created in the third century BC. Only the Great Pyramid of Giza has survived until today, whereas three of the other seven wonders were damaged during earthquakes: the Colossus of Rhodes was destroyed in approximately 227 BC, the Lighthouse of Alexandria was destroyed in the fourteenth century, and the Mausoleum of Halicarnassus (present Bodrum, Turkey) was damaged

Figure 16: Floods in Kostanjevica na Krki, Slovenia in September 2010. ► str. 70

CHERPLAN



several times in floods and earthquakes and is said to have finally disappeared in the fifteenth century (Migoñ 2013, 136).

Recent major destructions have also been predominantly connected with earthquakes. The 2003 earthquake in Bam, Iran, destroyed a large part of the city, including the ancient mud-brick citadel Arg-é Bam (Vatandoust et al. 2007), which is listed by UNESCO as part of the World Heritage Site of Bam and its Cultural Landscape. The 1996 earthquake in the Chinese province of Yunnan destroyed parts of the Old Town of Lijiang, among other things, and the 2008 Sichuan earthquake destroyed a major part of the Dujiangyan irrigation system dating back to the third century BC; both of these sites are recognized UNESCO World Heritage Sites (Taboroff 2000, 71; Migoñ 2013, 136). Cases like these are commonplace news in Italy. The two 1976 earthquakes destroyed settlement cores in Friuli. The 1997 earthquake in central Italy devastated the region of Umbria and especially the town of Assisi and its Papal Basilica of St. Francis of Assisi, which is on the UNESCO World Heritage List. Something similar happened in 2009 near the city of L'Aquila in central Italy, and in 2012 near Bologna in northern Italy. In 2003, Italy adopted a special standard to protect cultural heritage from earthquakes (Protecting ... 2007, v). Earthquakes are also common news in Japan. In this regard, the 1995 Kobe earthquake and the 2011 earthquake in Tōhoku and the subsequent tsunami should be mentioned. Damage that the 2011 earthquake caused to officially designated cultural sites spanned an area of more than 600 km² (Hanazato 2011, 2).

Floods threaten cultural sites in valleys. Chan Chan, a pre-Columbian archaeological site in Peru, which is also a UNESCO World Heritage Site, has been flooded several times (Managing ... 2010, 38). The city is made of dried mud brick and the flooding that threatens it is caused by storms from El Niño. Major damage to cultural heritage sites was caused by the 1966 floods in Florence, the 1993 and 1995 floods in Cologne (Migoñ 2013, 136), and the floods in Central Europe in 1997, 2002 (Taboroff 2003; Štulc 2007), and 2013.

In 2007, extensive forest fires in the Peloponnese threatened ancient Olympia, which is a UNESCO World Heritage Site. After the fire, the region was affected by severe soil erosion (Migoñ 2013, 136). Soil erosion was already a problem in Antiquity; for example, Plato wrote about soil erosion at the Acropolis of Athens (Platon 2004, 1319): »... the Acropolis was not as now [before Plato]. For the fact is that a single night of excessive rain washed away the earth and laid bare the rock ...« Over time, numerous ancient ports at the mouths of rivers deteriorated economically or were even abandoned due to the accumulation of eroded material from the hinterland and the subsequent growth of deltas (e.g., Miletus and Ephesus on the coast of Asia Minor; Migoñ 2013, 138).

Weathering is a natural process that affects cultural heritage over a long period of time. Good examples are the Megalithic Temples of Malta (UNESCO World Heritage Sites) or the Temple of Poseidon near Athens, which were built from limestone, which weathers easily. Salt weathering is also problematic; a good example of this is the historical city of Petra in Jordan, which is also on the UNESCO World Heritage List. The wind brings salt from the sea, causing significant weathering of the sandstone buildings.

Elsewhere ground subsidence is a problem; for example, in the medieval city of Calatayud in Spain, where the dissolution of gypsum causes ground subsidence and thus damage to the buildings (Migoñ 2013, 137). Other good examples are Oppenheim (Germany), Norwich (UK), and Ravenna (Italy; Protecting ... 2007, 3).

Coastal towns are threatened by both the rise in global sea level and coastal erosion. The best-known examples are Venice (Managing ... 2010, 36; Taboroff 2000, 72; 2003, 234) as a more recent example, and the prehistoric sites in the Orkney Islands, where the sea level rose significantly during the Holocene (The Rising ... 2013); both are UNESCO World Heritage Sites. Coastal erosion threatens numerous cultural heritage sites (from Roman times up until the Second World War) on the cliff coasts of England (Bromhead & Ibsen 2006), France, and the Mediterranean.

Sandstorms present another threat. In the past twenty years, they have heavily damaged more than forty kilometers of the Great Wall of China (also on the UNESCO World Heritage List) in Gansu Province (Sandstorms ... 2007).

It is very difficult to prevent cultural heritage sites from being damaged in natural disasters because immovable heritage sites cannot simply be relocated to safer areas. Many historical settlements developed in earthquake-prone areas or along coasts that are threatened by tsunamis (e.g., Southeast Asia, Japan, and Chile). Many were established in landslide-prone areas (e.g., the Inca town of Machu Picchu; Sassa et al. 2005) or in areas threatened by floods. The impacts of natural disasters can be mitigated by reinforcing buildings to protect them against earthquakes, stabilizing unstable slopes to protect them against landslides, and fixing banks, managing watercourses, and building dams to protect areas against floods, but destruction cannot be completely prevented (Migoñ 2013, 139–140). One should be aware that »the number and intensity of natural disasters are expected to rise in the course of the climatic changes now being observed on the earth« (Will & Meier 2007, 9).

5.12.1 RECOMMENDATIONS

The following recommendations are adapted from contributions by Massue and Schvoerer (2001, 2–5) and Stovel (1998):

Documentation and Inventory

Heritage properties, their significant attributes, and the disaster-response history of the property should be clearly documented as a basis for appropriate disaster planning, response, and recovery. Analysis should make reference to cultural and use significance, and the relationship of structures or elements to their setting. Property inventories established to protect heritage should, however, be used carefully. Property elements not listed, or »low« in priority, should not be perceived as disposable. The heritage values of heritage properties are more than the sum of the aggregate values of component parts, and efforts should be made to ensure that disaster-response plans are focused on preserving not only »significant« elements but the totality of the property. The existence of a complete record of the property should not substitute for all possible efforts to protect the property from the consequences of decay or disaster, or allow vigilance against risk to relax. Documentation should be secure (i.e., stored in several locations), reliable (i.e., its accuracy should be verified independently of those carrying out the initial recording), and readily accessible. Analysis of risks and assessments of cultural heritage should begin by preparing national inventories that will serve as the key instrument necessary for effective emergency planning. These inventories should be up to date, easily accessible, and spatially related by using geographic information systems (GIS).

Advance Planning and Preparation

For effective protection of cultural heritage at risk, advance planning and preparation are of crucial importance. It should be conceived in terms of the entire property and provide integrated concern for its buildings, structures, and their associated content and landscapes. Advance planning for the protection of cultural heritage against disasters should integrate relevant heritage considerations within a property's overall disaster prevention strategy. Preparedness requirements should be met in heritage buildings by means that will have the least impact on heritage values. No distinction should be made in planning between a property's movable and immovable cultural heritage components; there should be one integrated response plan for the property. A special property disaster-prevention strategy should be prepared that fully integrates concern for the cultural heritage within it in terms of the planning process used to develop and update the strategy and the particular response plans that might result. Risk preparedness should not be conceived only in emergency situations but interwoven into the routine management of cultural heritage resources.

Inclusion of Risk Preparedness into Management Plans

Management plans and maintenance programs for historic properties should integrate a cultural heritage-at-risk perspective, including the direct involvement of property occupants and users in developing emergency-response plans, providing that securing heritage features is a high priority during emergencies.

Their involvement in planning increases their understanding of the purpose of the proposed measures and the likelihood of effective response. Their involvement also brings their first-hand knowledge and experience of the property to the process of developing a response plan. Therefore, property managers must be able to work with inhabitants, administrators, and planners to resolve conflicts and to develop conservation strategies appropriate to local needs, abilities, and resources. The key concerns from a heritage perspective should be designing and installing disaster-protection systems or mechanisms in ways that will minimize the impact on heritage values. Hence, approaches to preparedness design that remain sensitive to heritage will generally require review of a large range of alternatives in order to ensure that the least-impact option has been identified. This perspective should include analysis of all possible human and natural sources of decay and loss, the degree of risk associated with each, and appropriate measures to reduce or mitigate risk. Management plans should establish priorities for protecting a property and guide fire brigades and civil defense officials to handle sensitive areas with care in responding to emergencies. It should also provide a record that will allow the accurate recovery (if warranted) of lost or damaged elements. Security of heritage should be a high priority during emergencies.

Recovery and Reconstruction

Following a disaster, every effort should be made to ensure the retention and repair of structures or features that have suffered damage or loss, where conservation principles should be integrated where appropriate in all phases of disaster planning, response, and recovery. Condition assessments must come from heritage professionals experienced in looking at similar situations. It is important that the response plan for the property identify in advance individuals capable of rapid and effective assessments. Such assessments should result in recommended measures for immediate and urgent stabilization and protection of cultural heritage. Budget provisions for such stabilization should be part of advance planning for improving property disaster-preparedness. Conservation principles should be used to guide property documentation before, during, and after emergencies and should be included among the legal and normative instruments applied in actions needed for damaged heritage elements in order to ensure an integrated response to post-disaster needs.

Cultural Heritage as a Post-Disaster Catalyst

Heritage can also play a catalytic role when it comes to economic recovery after a major disaster. Although tourism is often one of the first industries affected by a natural disaster, it is also the most resilient after a disaster. Getting tourism back on track, including cultural tourism, brings much-needed revenues and opportunities for recovery of the heritage site. Reconstruction should bear in mind that local communities are dependent on tourism revenues and that as tourism facilities are rebuilt these communities need the support to survive.

5.12.2 GOOD PRACTICES

Assessment of Rockfall Hazard in Berat as a Tool for Cultural Heritage Preservation, Albania

A rockfall is a fragment of rock detached along intersecting discontinuities of a rock mass that falls along a sub-vertical cliff and proceeds down slope by bouncing and flying or by rolling on talus or debris slopes (Varnes 1984). Although rockfall does not pose the same risk as larger scale mass failures, the damage it causes can be relevant when threatening human lives, strategic infrastructure, and cultural heritage items. The motivation to address the rockfall hazard in Berat lies in the threat it poses to its world-class cultural heritage. In recent years, a number of rockfall events have been reported that have caused damage to private houses classed as cultural heritage and have reached a main street. Recent rockfall history suggests that events likely to cause such damage happen

on an annual basis. Geo-structural and geomorphologic mapping, along with geomechanical characterization of rock masses and the acquisition of eight geomechanical stations, provided a robust input dataset for better understanding rockfall phenomena in Berat.

The methodology adopted in this study for assessing the rockfall hazard in Berat is an adaptation of the Rockfall Hazard Rating System by Pierson et al. (1990) and is based on a factorial analysis of the geological, geomorphologic, and geomechanical features of rock slopes that are recognized as the main predisposing factors for rockfall. Each sector of the Mangalemi and Gorica rock slopes was rated by scoring its geological characteristics, rock mass quality, and orientation of slope faces versus main discontinuity sets. Additional scores were given to account for the expected run out of fallen blocks and for the actual (though limited) rockfall history of the specific site. Four classes of relative rockfall hazard were defined.

The highest hazard class (h1) includes the central part of the Mangalemi rock slopes, which has recently sourced a number of rockfalls reaching private houses, St. Michael's Church, and Antipatrea Street (Rruga Antipatrea) with reported block sizes up to approximately 1.5 m³. The level of hazard in this sector is mostly due to the highly jointed and karstified rock mass resting at the hinge of the Berati Anticline. Given the poor geomechanical properties of the rock mass, large rockfall events or even mass movements cannot be confidently excluded from this study.

Most of the remainder of the Mangalemi rock slope and the uppermost part of the Gorica rock slope are included in the h2 hazard class and are still a source of rockfalls, albeit of a relatively less dangerous nature. For these two hazard classes, mitigation measures should be adopted to limit the risk of damage to cultural heritage.

Hazard classes h3 and h4 include areas prone to occasional rockfalls with estimated maximum block size on the order of 0.1 and 0.01 m³, respectively.

Among the feasible remediation options for the most dangerous and least accessible sectors of the Mangalemi and Gorica rock slopes are: 1) setting up rockfall nets, 2) installing free-hanging mesh from the top of rock slopes, and 3) dislodging or securing unstable rock blocks. Immediate prevention measures to adopt at the top of hazardous rock slopes include: 1) restricting access to grazing animals and people, 2) installing drainage systems to limit rainfall runoff, and 3) removing deep-rooted plants and preventing root-taking near edges of rock slopes.

Assessment of Ground Subsidence at Aquileia, Italy

The northwestern coast of the Adriatic Sea is a subsiding area that hosted lagoons, deltas, and marshes during the Holocene high stand. Many important cultural heritage sites are present along this coastland, some of which are located in lowland areas and seriously jeopardized by flooding hazard due to ground subsidence and eustasy (1.2 mm/yr in the northern Adriatic Sea coastal areas; Tosi et al. 2009).

Although the impact of such a threat has been extensively studied in the past and continuously monitored in major cities such as Venice and Ravenna, there are other sites of great historical and archaeological value that have not been the object of specific study. Among these, Aquileia is a small town located on the distal reach of the Isonzo fan delta and at the edge of the Grado and Marano lagoons, about 10 km inward from the coastline. In antiquity, Aquileia was the ninth-largest city and one of the most important river harbors of the Roman Empire. Since 1998 it has been on the list of UNESCO World Heritage Sites because of its well-preserved remnants from the Early Roman Empire and the medieval patriarchal basilica complex, which still preserves the magnificent floor mosaics of the former 4th-century basilica. With respect to subsidence-related hazards (i.e., flooding and salt water intrusion), the case of Aquileia has recently drawn the attention of the scientific community due to the severe structural damage to the patriarchal basilica linked to differential ground settlements.

The approach followed is based on integrating datasets of ground vertical displacement from both persistent scatterer interferometry (PSI) and levelling surveys, and matching results with a subsoil reference model mostly based on boreholes. The analysis of present-day ground movements was performed using PSI on ENVISAT images acquired from 2003 to 2010 and provided by the Italian national geoportal (Portale Geografico Nazionale; Internet 30)

The subsoil reference model was obtained correlating a number of boreholes from both the literature and public domain repositories. The palaeo-environmental and genetic significance of the sedimentary units present in the subsoil were reconstructed by framing them in the Pleistocene-Holocene stratigraphic context with the aid of radiocarbon ages from the literature. Finally, sedimentary units were converted into geotechnical units based on dominant lithotypes and the shallow subsurface (depth < 5 m from ground surface) detailed by compiling penetrometer data from technical reports made available by the Consortium for Reclamation of Lower Friuli (Consorzio di Bonifica Bassa Friulana) and the Municipality of Aquileia.

A comparison of subsidence rates from PSI and the levelling data of this study confirms the scenario of regional subsidence affecting the Venetian-Friulian coastland and highlights its significance and critical nature for preserving cultural heritage on the northwestern coast of the Adriatic Sea. In Aquileia, given the same condition in the subsoil of the archaeological site and the town, the variability of subsidence rate between the two locations likely reflects the diverse consolidation histories of the background floodplain clays present in the subsoil, as related to differential and diachronous loading from buildings and backfill during historical times. The small-scale variability of the subsidence rate observed at the patriarchal basilica complex would reflect instead differential ground surface settlement associated with heterogeneities of the shallow subsoil, such as those represented by sandy-gravelly paleo-channel infills encased in the high-compressibility peaty-clayey soils of the floodplain.



JANEZ NARED

Figure 17: The basilica in Aquileia, Italy.

5.13 THE USE OF GEOINFORMATICS IN CULTURAL HERITAGE MANAGEMENT

(Mateja Breg Valjavec, Roberto Vallone)

Geoinformatics is a relatively new discipline offering a range of methods and tools for conducting research in various areas of expertise connected with protecting and managing cultural heritage (geology, natural hazards, transport, and accessibility). It is an independent discipline that provides a coherent integrated approach to the acquisition, storage, analysis, modeling, and presentation of geo-processes (Ehlers 2008). In contrast to geoinformatics, GIS (geographic information system) is a series of basic and complex tools for measuring, planning, and analyzing the real world (Longley et al. 2005). With geoinformatics it is important to emphasize the significance of the findings and interpretation of results rather than just the technical process itself. The interpretation of data that have been newly acquired through GIS analyses in particular is the added value that geoinformatics contributes to cultural heritage management.

The use of geoinformatics in cultural heritage often ends at the level of recording structures (producing a national heritage register) or continues at the level of 3D or 4D presentations of individual items of cultural heritage for tourism promotion and marketing reasons. With regard to cultural heritage, it is very important to highlight its comprehensive sustainable management because only effective management can preserve the cultural landscape and its cultural heritage in the present landscape, where the original factors for the existence of this heritage are often no longer provided. New markets and drivers of change must be found and a new context must be created (Palang & Fry 2003). Geoinformatics makes it possible to acquire, present, and aggregate data on the former and present landscape. One can analyze data, determine physical or material changes over time, and compare historical and current conditions (e.g., settlement, land use, communications, surface morphology, availability of water resources, forest cover, and natural hazards). Sustainable development of cultural heritage sites can be successfully planned only based on a critical evaluation of results.

Geoinformatics can be used to support the cultural heritage system at three technical stages of cultural heritage management:

- Recording or identifying: this forms the basis for designing a geographic information system for immovable cultural heritage. The system's basic units, location, and characteristics are defined at this level. The final result is a digital cultural heritage sites register that is usually accessible online.
- Protection: this stage of support is used to produce expert bases for protecting heritage, which depends more on the expert evaluation of the cultural and historical role and the definition of the level of protection of a structure or protected area rather than the technical complexity of GIS support.
- Management: this stage offers good technical support and requires a qualified expert, such as a spatial planner, who knows how to analyze all of the data from the complex GIS using available tools, interpret the results, and use them in making and substantiating decisions.

Recording, protection, and management are conceptually interconnected, whereas they differ greatly in terms of the GIS support and the results required for individual levels. The differences can be seen in designing GIS applications and tools, and developing algorithms that enable further analyses and the acquisition of new data, and will provide decision-making support.

The management of cultural heritage sites is the highest and most demanding stage of using geoinformatics in cultural heritage. It involves planning the development of cultural heritage sites by taking into account natural conditions and the current socioeconomic features and needs of the environment that people once placed this heritage in for a specific purpose. It includes a wider analysis of data, combining various data, and interpreting results for acquiring new information and thematic maps that help plan changes to the environment. A modern environmental approach to planning considering Nicolics et al. (2012), referred to as »environmental planning of cultural heritage sites,« is required in order to form a solid basis for balancing and providing a synergy between cultural heritage conservation and socioeconomic growth. The main goal of environmental planning is connecting traditional spatial planning with nature

protection goals and ensuring sustainable development. The environmental aspect of planning is comprehensive, consisting of three areas: the built and historical environment, the socioeconomic and cultural environment, and the natural environment (Nicolics et al. 2012).

Southeast Europe has extremely rich, variegated, and diverse cultural heritage. The level of development and use of geoinformatics in managing immovable cultural heritage varies by country. In the best-case scenario, geoinformatics in cultural heritage is used at the national, regional, and local levels. In some places, GIS applications are only available for internal use, and elsewhere they are used publically. The types of cultural heritage with the greatest GIS support include archaeological sites, historical monuments, and cultural heritage trails (Petrescu 2007).

5.13.1 RECOMMENDATIONS

Guidelines for recording/identifying cultural heritage sites using geoinformatics support:

Defining the Location of and Information about Cultural Heritage Sites

The most common method of defining the location of cultural heritage sites is determining the coordinates using a large-scale topographic map or remote sensing images (aerial and satellite images) in the office, or defining coordinates in the field (GPS). Collecting information about the location is followed by obtaining new or existing information on immovable cultural heritage items.

3D Metric Analyses of Buildings That Aid the Restoration and Renovation of Cultural Heritage Sites

LIDAR can prove to be very helpful in metric analyses of buildings, which are important for restoring and renovating structures. This is a remote sensing technology that measures surface elevation and is used to create detailed digital terrain models (DTM) or digital surface models (DSM). Laser data are also processed to analyze and reconstruct historical (archaeological) structures.

Modeling and 3D Reconstruction of Past Landscapes

Photogrammetric stereo-processing of aerial photos enables 3D-modeling of past landscapes and thus the reconstruction of structures that no longer exist today. This requires high-quality large-scale historical aerial photos that make possible stereo-evaluation and the creation of 3D landscape models.

Guidelines for managing cultural heritage sites using geoinformatics support:

Defining the Management Area

Defining the management area is the first goal of managing immovable cultural heritage. Usually management is placed within the relevant administrative unit (settlement, municipality, region), as part of which planning takes place in other sectors (economy, energy industry, municipal services), but a completely new management area can also be defined based on a prior geographical analysis.

Preparing and Including Expert Opinions

Preparing and including expert opinions for protecting areas of immovable cultural heritage against natural disasters and other potential hazards (environmental accidents, terrorist attacks, and so on) is the next step in the management process that requires geoinformatics support. This support should include a system of data (graphic, raster, vector, and tabular) and tools that enable users to create their own thematic maps.

Setting Up an Online Cultural Heritage GIS

An online cultural heritage GIS is a suitable form of support for environmental planning at cultural heritage sites. The maps created are connected with databases, which makes it possible to update maps,

adjust their content, scale, and legends, and create entirely new thematic maps or detailed thematic plans for the water-supply system, transport, green areas, buildings, land use, and so on. In addition, it can also serve as an important information platform that tourists and other stakeholders can use to obtain relevant spatial information on cultural heritage.

5.13.2 GOOD PRACTICES

Inventorying Abandoned Lime Pits in the Slovenian Karst, Slovenia

Lime pits are structures that were used in the past for producing (burning) quicklime from limestone. Lime pits can be inventoried using remote-sensing methods or, more specifically, the analytical shading of LiDAR digital terrain models, which enables remote sensing and inventorying unknown historical heritage structures. Figure 18 shows the application of laser scanning data for inventorying and georeferencing the lime pits in Slovenia's Karst region.

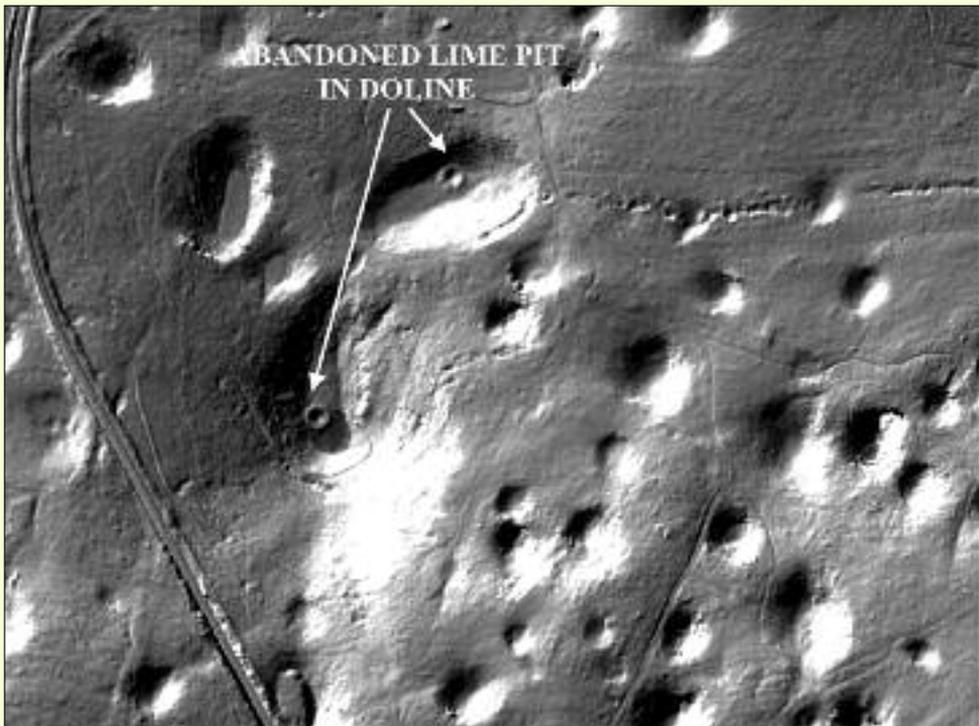


Figure 18: Defining lime pits with laser scanning.

Reconstructing the Former Railroad in the Northern Outskirts of Ljubljana, Slovenia

The railroad in Ljubljana's northern outskirts played an important role during the Second World War. It was part of the railroad section that the Germans built during the war. After the war, the tracks were dismantled and the embankment was removed, which is why no visible traces have been preserved.

Aerial images can be used to reconstruct the route of the tracks, but the 1959 digital terrain model can also show whether the tracks ran along the embankment or in a cut (Figure 19).

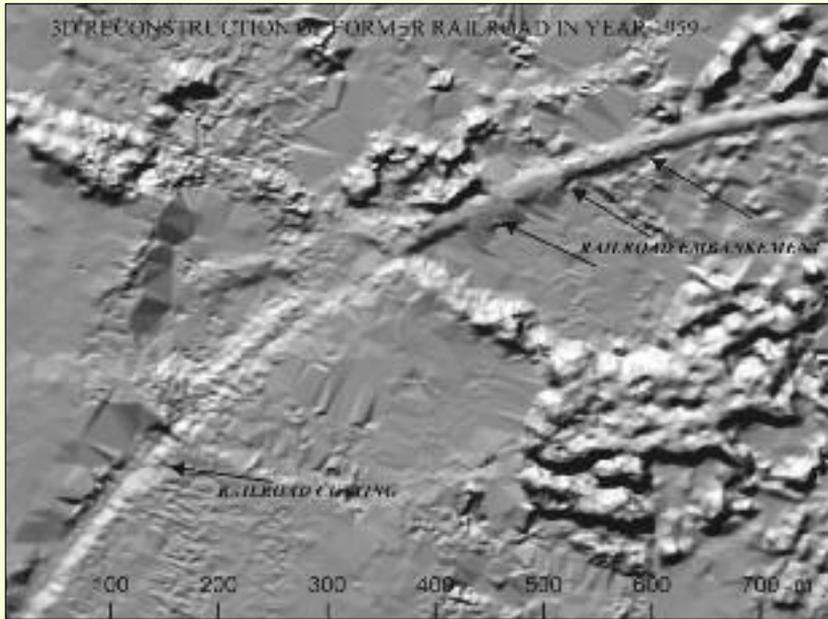


Figure 19: 3D reconstruction of remaining cultural heritage elements.

CHERIS: CHERplan Information System

A tool was developed within the CHERPLAN project for managing and sharing geographical data pertinent to cultural heritage sites. CHERIS (CHERplan Information System) is a modern WebGIS tool developed as a modular platform in which various software carries out different, specialized tasks contributing to map reconstruction, management, and publication on the web (Figure 20).

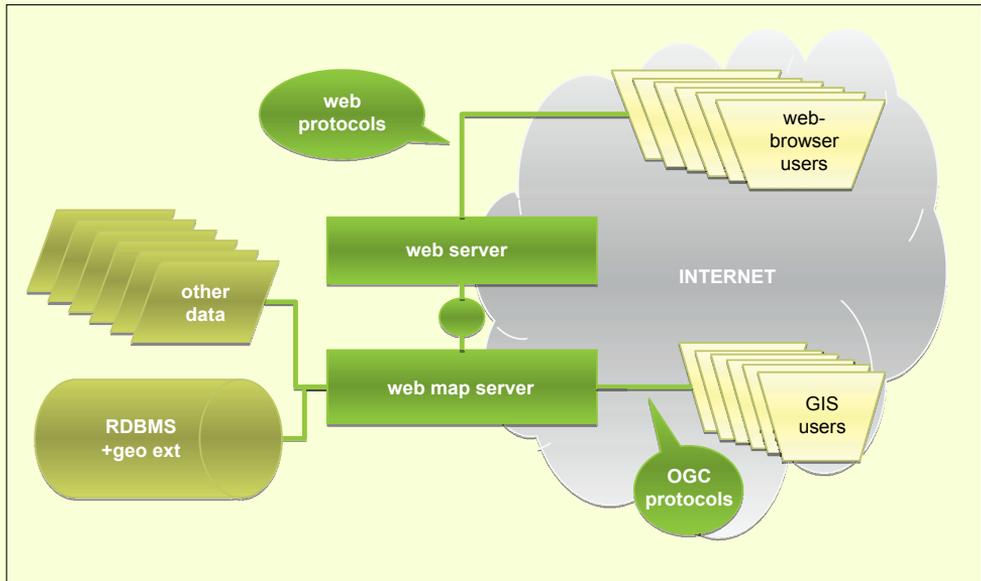


Figure 20: CHERIS platform scheme.



Figure 21: The CHERIS Web Interfaces (detail on the Aquileia site).

CHERIS was designed and implemented with the contribution of all CHERPLAN partners, resulting in a tool able to provide an important aid to environmental planning of cultural heritage sites. The CHERIS geodatabase is the real cornerstone of the entire platform. It is able to store and manage all of the necessary information: both alphanumeric and geographic, as well as raster images. Furthermore, data can be imported and/or exported by or to most common formats, and maps can be published as standard Open Geospatial Consortium (OGC) sharing protocol (Internet 27) through the GeoServer (Internet 28) engine. Data specific to cultural heritage sites have a special »place« inside the CHERIS database and are processed in a specific manner, both in the database itself and in the web interface, allowing the user to manage them as distinctive features (Figure 22).

Another important functionality of CHERIS concerns the ability to manage different projects for different users, allowing stakeholders to use the platform for multiple sites and/or multiple topics, and thereby focusing the attention of users and managers on specific areas of interest in both the geographical and argument sense. Every project is characterized by a specific geographic extension, basemap, and spatial reference system, and different users can manage specific layers (in read-only or read-write mode) on the basis of the platform administrator's choices.

Every partner has its own CHERIS platform installed in an independent manner, managing its own projects and data, and using country-specific language and spatial projections. CHERIS was developed using open-source software only, and it is itself released under the terms of the GNU General Public License (Internet 29). In addition to avoiding partners bound to specific commercial entities, this choice will definitely simplify future development of the platform on the basis of both the evolution of software technologies and the special features of individual stakeholders.



Figure 22: CHERIS layer management inside the web interface.

5.14 SUSTAINABLE TRANSPORT AND CULTURAL HERITAGE

(Matej Gabrovec, Nika Razpotnik Visković)

The connection between cultural heritage and transport is multi-layered. Transport provides access to cultural monuments, and only accessible cultural monuments can perform their function, without which it would make no sense to conserve and maintain them. Cultural heritage sites are often characterized by a large concentration of visitors, which is why they also cause increased traffic flows. An important task of cultural heritage managers is to provide access to cultural monuments following the principles of sustainable mobility, so that visitors have the least possible impact on the monument and the area around it. Cultural heritage management should include both traffic generated by visitors, and through traffic and local traffic near the monument.

Some cultural monuments that are visited by hundreds or even thousands of people a day generate a lot of traffic themselves. In this case, the traffic infrastructure intended for the visitors to cultural heritage sites may itself greatly degrade the area around the site. Cultural heritage can also be threatened by through traffic and therefore all new main roads should be planned outside the area surrounding the cultural heritage sites.

A major negative impact of traffic is its impact on the landscape. The construction of main roads results in the permanent destruction of forests and farmland, and frequently also in changes to urban areas and the demolition of buildings. Poorly planned main roads visually degrade the landscape, and planning is an especially delicate issue in protected natural areas and areas near cultural heritage sites. On the other hand, transport structures can be architectural masterpieces that can blend in nicely with the environment and therefore many of them, such as bridges and viaducts, have already been declared cultural monuments (Poulit 2007).

Traffic causes air pollution, which impacts both people's health and various types of construction materials, which means it also has a negative impact on cultural monuments. Research shows a clear cor-



BOJAN ERHARTIČ

Figure 23: Public bikes in Olympia, Greece.

relation between areas with polluted air and increased weathering of construction material (Siegesmund, Weiss, & Vollbrecht 2002; Török 2002).

Cultural heritage (real estate) can be damaged by tremors caused by heavy vehicles, which has also been highlighted in UNESCO recommendations on natural and cultural heritage protection (Recommendation ... 1972). Such traffic is problematic where roads are in the immediate vicinity of cultural monuments. It is especially inappropriate on bridges that are part of cultural heritage and that were built before the invention of motor vehicles.

High-quality cultural monuments blend in with the natural environment. Visiting a cultural heritage site is also often combined with enjoying the natural surroundings and therefore a degraded area around the monument also decreases the monument's attraction. If a cultural heritage site is visited by large numbers of people, traffic infrastructure intended for tourists may destroy the monument's surrounding area. It therefore makes sense to manage cultural heritage following the principles of sustainable mobility.

Cultural heritage sites can be predominantly found in cities, especially in their historical centers, where access to them is key to the visitors. In cities, access to every individual cultural monument cannot be planned separately because traffic and mobility are part of wider social and urban development, in which cultural heritage also plays an important role. This means that access to cultural heritage should be provided such that it is economical and effective, is accessible to all social groups, and makes it possible to choose between various modes of transport. It should be provided such that emissions, noise, and tremors do not threaten the cultural heritage sites and their visitors, that as little land as possible is used for providing access to cultural monuments, and that it does not have a negative impact on the area surrounding the monument. In assessing the impacts on cultural heritage, special attention is also given to any visual degradation of the surrounding area.

Sustainable urban transport planning requires several steps: (1) performing an initial analysis of conditions and formulating possible scenarios; (2) developing a common vision, defining goals, preparing an action plan and budget, and allocating authorizations and funds; and (3) following up and evaluating sustainable urban transport planning (Wolfram & Bührmann 2007).

Sustainable urban transport planning measures should be continuously adapted to local conditions; in every area, the planning should be adapted to the local spatial, demographic, social, cultural, and other special features. At the same time, these measures should be part of not only local development policies, but also regional and national ones. The proposed recommendations for finding sustainable transport solutions connected with cultural heritage are also suitable for planning access to natural heritage sites. Even more, cultural and natural heritage should not be discussed separately at all because Europe does not have completely natural landscapes. It has cultural landscapes, in which people have reshaped the natural environment to various degrees (Howard & Papyannis 2007).

5.14.1 RECOMMENDATIONS

Recommendations for sustainable urban transport planning:

Facilitating Changes in Modes of Transport through Disincentives

Changes in mobility behavior can be achieved by using disincentives, including charging external transport costs, urban tolls, and setting up restricted traffic zones in city centers with limited and payable access for motorized vehicles. Park-and-ride (P&R) facilities on the city edges and within the region can support above mentioned measures.

Facilitating Changes in Modes of Transport through Incentives

A similar effect can be achieved by using incentives, including the promotion of public transport and accessibility to public transport information, mobility plans, raising awareness, and encouraging walking and

cycling. It is also important to manage urban public areas and roads by promoting environmentally friendly forms of mobility, especially walking and cycling.

Developing Clean and Quiet Transport Systems

Good quality of living and appropriate management of cultural heritage sites also entail measures to reduce noise, such as various regulations on reducing noise emissions, introducing alternative fuels for cars and public transport vehicles, and limiting access based on emission standards.

Improving Transport Effectiveness

Improved effectiveness and flow of traffic can be achieved in passenger and freight transport; with regard to freight transport, suitable organization of delivery and the use of intelligent transportation systems are of key importance.

Introducing Pedestrian Zones and Traffic-Calming Zones

Closing areas to motor vehicles and introducing traffic-calming measures reduce the negative impacts of traffic on cultural heritage while improving the quality of visitors' experience of the cultural heritage site.

Recommendations for sustainable transport planning outside cities and other major settlements:

Building New Transport Infrastructure Is the Last Option

Before building new infrastructure, it is important to weigh whether various measures such as promoting public transport or intelligent transportation systems can be used to carry more passengers on the existing infrastructure.

Prioritizing Public Transport

Public transport stops should be located closer than car parking areas provided that the public transport frequency is satisfactory. In the case of extremely popular cultural monuments located in a sensitive natural environment, it makes sense to close the access road to cars and set up P&R facilities in the surroundings. Limiting the number of parking places near cultural monuments can also stimulate the use of public transport.

Prioritizing Pedestrians and Cyclists

Cultural monuments and sites should be connected with the network of bicycle routes and hiking trails, where visitors can better experience the harmony between the monument and its surroundings.

Promoting Sustainable Mobility in Information Material and Financial Incentives for Public Transport Users

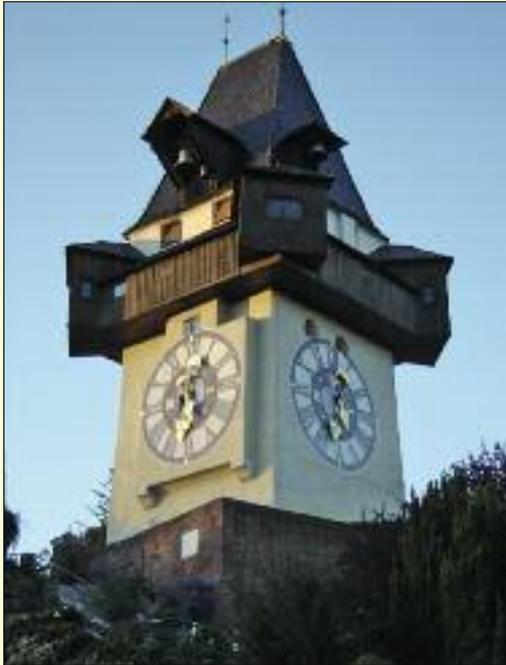
Descriptions of access to cultural monuments in information material should first and foremost provide information on access that is environmentally friendlier and more sustainable. In addition, public transport users may be given discounts on entrance fees or their transport fees.

5.14.2 GOOD PRACTICES

Soft Mobility in the City of Graz, Austria

The city of Graz, the capital of Austria's Styria region, is known not only for its exceptional historic center and Eggenberg Castle (UNESCO world heritage sites since 1999) but also for its exemplary efforts at sustainability (Internet 12). As early as 1986, city authorities implemented the concept of

»soft mobility« in its urban planning. Consequently, the historical center became a pedestrian zone, open only for cycling and delivery operations to a limited extent. Since then, Graz has won several awards: Pedestrian-Friendly City in Austria (1992), Child-Safe Traffic (1993), Traffic Safety Award (2005), and Civitas Town of the Year (2008). One of the most important components of »soft mobility« is encouraging cycling and developing a cycling route network, which includes not only the city center but also extends to the suburbs and the entire region. Cycling (and pedestrian) routes connect parks, playgrounds, other public places, and residential areas with a green network with a total length of over 500 km. All across the metropolitan area of Graz, nature is close by and thereby offers cyclists routes away from heavy traffic. The percentage of local cyclists has been increasing and the city is also recognized as a popular tourist destination for cyclists at the European level (Internet 13; Internet 14).



JANEZ NAREĐ

Figure 24: Clock Tower in Graz, Austria.

In 1992, Graz was the first city in Europe to introduce a speed limit for the entire city: 30 km/h in all residential areas and on all side roads. The effects of this deceleration was a decrease in traffic accidents and a reduction of noise and emissions. Out of 996 km in the road network (excluding freeways in urban areas), 802 km are in this 30 km/h zone. Hence, the speed limit remained 50 km/h only on major roads. The introduction of the 30 km/h zone was the measure most discussed (with a two-year test in two areas, research work, and intensive discussions) and also the most effective one (Internet 13).

The city of Graz continues to develop sustainable transport solutions and participates in several European programs that support environmentally friendly and energy-efficient solutions, encouraging vehicle owners to switch to cleaner fuels, whether they be biofuels, methane, or hybrid systems using both combustion engines and electric propulsion (SUGRE, Ecodrive; Internet 14).

Mobility Centers in the Flanders Region

Slimweg mobility centers (the first one was introduced in Antwerp) are an initiative of the Flemish government in collaboration with a number of sustainable partners and the provinces (Internet 15). Mobility centers offer free information and advice on sustainable mobility to both individuals and companies, including information on walking, cycling, busses, trams, trains, carpool parks, park & ride sites, car-sharing stations, and taxi stands throughout Flanders.

Mobility centers are a result of cooperation between all Flemish transport providers (busses, trains, cars sharing, car-pooling, taxis, the cycling association, and the walking association). Users can obtain all information about their transport options at Slimweg centers, by telephone, or on the official web platform. The web platform also offers an overview of how to reach the most important tourist locations, cultural events, amusement parks, shopping centers, and so on in the five provinces of Flanders (Good Practice Examples ... 2011).

5.15 THE ROLE OF SOCIAL ENTREPRENEURSHIP IN REVITALIZING CULTURAL HERITAGE

(Lucija Lapuh)

Social entrepreneurship is a type of socially responsible entrepreneurship whose key goal is not to maximize profit, but to create social value (Internet 16). A social economy offers new opportunities for innovative employment of vulnerable target groups on the labor market (Internet 17). The main purpose of traditional entrepreneurship is to generate profit, whereas social enterprises prioritize the growth of social capital and solve social, environmental, employment, and local issues by using entrepreneurial skills such as high-quality management, innovation, and competitiveness (Grmadnik 2012). Because it creates jobs and contributes to society's economic growth, it has a positive impact on society as a whole.

Cultural heritage sites must deal with social, economic, and environmental needs and priorities. Historically important sites can significantly help improve the economic and social conditions in a region. Revitalizing cultural heritage involves its renovation and the development of various functions (Urbact project results 2011).

Social enterprises are enterprises and organizations that seek to ensure social welfare and meet specific economic and social criteria (Internet 18; Internet 19).

Economic criteria include the following:

- Manufacturing products and/or selling services is their main line of business;
- A high level of autonomy;
- A market orientation;
- A defined percentage of unpaid work.

Social criteria include the following:

- They were established based on a civil initiative;
- The decision-making process does not depend on the share of capital invested;
- Active inclusion of all stakeholders;
- Operating to the benefit of its members, its users, and the community;
- Profit is largely reinvested in the business or the local environment because the basic goal is not to increase the owners' profits.

Social enterprises contribute to re-integration of disadvantaged groups on the labor market, increased connectivity, and enhanced social capital at the local level. They provide specialized services that are beneficial to society, help reduce the informal (black and gray) economy, and provide consumers with a broader selection of services and products (Internet 16). With the Europe 2020 strategy, social entrepreneurship has become an important element of the EU economy over the last two years. In times

of recession, it provides an opportunity for new jobs (Bizjak 2012) and also coincides with the concepts of social responsibility and sustainable development (Grmadnik 2012).

Opportunities connected with cultural heritage revitalization lie in technological, economic, and social challenges, spatial planning, and ecological restoration. Revitalization should also include experts that can incorporate their expertise and innovation culture in private and public organizations; this includes social enterprises, where they can include goods and services that are not easy to produce on the market (Urbact Project Results 2011). Heritage management involves not only the preservation of a historically important site, but also the development of this site and its surrounding area (The Urbact II Program 2010).

With social entrepreneurship ideas, it is important to understand the issues and needs that can at the same time offer an opportunity for market activities. Innovative social entrepreneurship seeks to develop innovative solutions in order to achieve social benefit while also achieving an economic effect (Mesojedec et al. 2012).

One can speak of social entrepreneurship primarily in two areas of cultural heritage revitalization: social entrepreneurs can help physically renovate cultural heritage structures or preserve their functional value. Physical renovation involves the renovation of architectural heritage and other structures of immovable material cultural heritage (construction and restoration work). In preserving the functional value of structures, social entrepreneurs can play an important role in tourism (tourist information offices, museums, galleries, souvenir production, etc.) and food services.

As part of cultural heritage revitalization, social enterprises must take into account the wider social and economic features of the heritage site area in order to determine which services and products they can offer. They also need to know who the potential buyers or users are, how the products will be delivered, what sources are needed for effective operations, who the suppliers and partners are, whether the products will be competitive on the market, and what the opportunities for expanding their business



JAMEZ NAREĐ

Figure 25: Souvenir production is an area where social entrepreneurs can build their potential.

are (Mesojedec et al. 2012). The long-term success of social entrepreneurship in cultural heritage requires promoting human resources development in cultural and leisure activities, and training new staff in the restoration and maintenance of cultural heritage in the private and public sectors (Multi-Functional Historic Urban Areas 2010).

There is an important connection between tourism and historically important sites. The range of tourism services can be based on traditional handicrafts, local restaurants, markets, specialized shops and services, and art, which can be registered as social enterprises. Young people can learn and revive these skills. This can benefit local companies, their employees, and visitors (Urbact Project Results 2011). Companies involved in cultural heritage management, production of tourism-related audiovisual material and services (guided tours, bookshops, online bookings and ticket sales, etc.) should be promoted because they can connect tourism initiatives for preserving cultural heritage (Multi-Functional Historic Urban Areas 2010).

Social tourism or »tourism for everyone« is one of the most important parameters of the EU sustainable tourism policy, which focuses on achieving the objectives of the Lisbon and Gothenburg strategies. The EU also seeks to achieve these objectives by promoting tourism products, services, and mobility for four specific European social groups: the elderly, the disabled, young individuals and young families, and financially disadvantaged social groups (Internet 20).

5.15.1 RECOMMENDATIONS

Social Entrepreneurship Areas

Social enterprises can operate in areas that are connected with cultural heritage revitalization: science, research, education, social tourism, technical culture, and the conservation of cultural, technical, and natural heritage. Establishing and promoting social enterprises involved in the physical renovation of cultural heritage sites (e.g., restoration) is recommended as well as establishing and promoting social enterprises involved in the development of various functions connected with cultural heritage sites (enterprises that preserve traditional production in a specific heritage area show great potential in revitalizing the content of sites).

Financial Incentives Provided by the State

Social enterprises are extremely important in areas for which the state fails to suitably provide for various reasons. Therefore, the state should use financial incentives to stimulate the establishment of new enterprises and the development of existing ones (performance bonuses), and to attract new investors into this form of economic activity.

Education and Support Institutions

All three sectors (i.e., private, public, and NGOs) must be educated in solving social issues through social entrepreneurship and providing information on the social and economic advantages of this type of economic activity. Relevant institutions specialized in providing support to social entrepreneurship could play an active role in this regard.

5.15.2 GOOD PRACTICES

The Premiki Institute and Travel Agency for Accessible Tourism (Zavod in turistična agencija za dostopni turizem Premiki), Slovenia

Accessible tourism is one of the more promising industries in Europe. During the current economic crisis, which can also be felt in tourism, and the period of growing competition among tourism providers,

tourism operators are seeking new target groups. The specialized range of tourism services for people with special needs is experiencing rapid growth. This is the result of numerous measures for the equal inclusion of vulnerable groups in society, which EU countries (including Slovenia) have been carrying out, while at the same time tourism operators are becoming increasingly aware of and understand the needs of vulnerable target groups. Just like other people, individuals with special needs are prepared to spend part of their income on vacations (Internet 21).

The institute has been following the principles of social entrepreneurship since it was established in 2010. It combines tourism activities with hiring hard-to-place jobseekers with mental disorders that do not hold the status of a disabled person (Internet 16). By combining supply and demand, the agency is creating a network of disabled-friendly suppliers ranging from accommodation to the entire range of tourism services. This is a social enterprise focusing on sustainable tourism that seeks to bring together people with special needs and their friends and family by offering specially adapted travel (Internet 21).

The Foundation of Santa María la Real, Spain

Cultural heritage can form the basis for kick-starting local development, including young people in society, and improving employment. The Foundation of Santa María la Real helps people find or create jobs connected with cultural heritage. It explores opportunities to create jobs in urban rehabilitation. Their workshops for young people are financed through government subsidies. The cultural heritage conservation programs are carried out by architects, restoration specialists, historians, and construction engineers. After the participants complete their training, the foundation also helps them find jobs (Internet 22).

Acta Vista, France

The French enterprise Acta Vista tackled the problem of unemployment and the restoration of buildings of special cultural value at the same time. It specializes in renovating and restoring old buildings that are part of cultural heritage and offers training in carpentry, stonecutting, and bricklaying for old buildings. It hires unemployed people between eighteen and sixty-five for a maximum of one year, which enables them to qualify for construction work. With this experience, the workers have a better opportunity to find long-term employment with another company (Internet 23).

5.16 PUBLIC-PRIVATE PARTNERSHIPS IN CULTURAL HERITAGE PROTECTION

(Peter Repolusk)

The role of cooperation between the public and private sectors is becoming increasingly important in the modern world and especially in economically well-developed countries. This is especially evident in managing transport and environmental infrastructure. In the past, the public sector (most commonly the state) tended to manage a major portion of the economy and social activities. Towards the end of the twentieth century, countries began to increasingly adopt the management practices used by the private sector. The main reason for this was usually increasing budget deficits. Public-private partnerships have several advantages: they provide additional financing options, effective cost-economizing practices developed by the private sector, and increased service quality. The main purpose of public-private partnerships is for the private sector to plan, finance, build, and manage projects, and in return use the majority of profit generated by individual projects (Čepeljnik 2006).

Hence private-public partnerships can be defined as follows: a public-private partnership is a long-term (contractual or institutional) form of cooperation between at least one public and at least one private

partner in connection with public tasks, which enables the public partner to effectively supervise and take unilateral measures to protect the public interest, and at least a partial transfer of risk connected with this partnership to the private partner (Ferčič 2005, cited in Čepeljnik 2006). The scope of the concept of public-private partnership is significantly expanded with the inclusion of a third sector, which in the broadest sense of the word refers to the non-government sector without any direct financial participation; it could also be defined as civil initiative, civil society, non-profit organizations, the professional community, or the general public.

In western Europe, private initiative is already well-established in cultural heritage management. This applies equally (or to an even greater extent) to English-speaking countries around the world with an English cultural tradition, in which the economic importance of private investment is even greater than in Europe. In southeast Europe the private sector is less strongly established; this especially applies to countries that had a communist regime prior to 1990. The complete or partial restriction on private interest, investment, and management that was in place for more than four decades is especially evident in economically poorly developed areas and areas with poorly developed tourism infrastructure. Conditions are becoming increasingly problematic because of the growing public debt and the economic crisis, which increasingly limit the financing of public institutions responsible for cultural heritage management.

The decision about whether specialized areas of administration should remain within the public domain or »privatize« remains open. Institutional reforms demand changes not only in training the staff, but also in regulating the relationships between regions and institutions, and in solving the cultural heritage issues shared by similar and often geographically overlapping areas of expertise (e.g., nature and natural heritage protection, urban and spatial planning, and economic and regional development). Southeast Europe is only making progress slowly, either because of budget issues or inertia and refusing to introduce changes. The ideology behind managing cultural heritage has not changed significantly compared to the past. In western Europe, private owners and their expert advisers play the dominant role in cultural heritage protection; they are especially important in developing »living heritage.« Decentralizing the operation of heritage and linking it with responsibilities of municipalities (e.g., in land use planning) should play a more significant role in the future. Common approaches and policies should be developed at the national level together with related fields, such as spatial planning, environmental protection, protection against natural hazards, and investment policy. The managerial principle of heritage management should only prevail in connection with its conservation and protection (Picard 2008a, 2008b, 2008c, 2008d).

The status of the owners of real estate (buildings and appertaining land) is especially important with architectural heritage. The basic questions arising in this regard include the following:

- Are the owners sufficiently informed about the regulations and arrangements for protecting their buildings?
- Do the owners carry out the required maintenance and restoration of heritage?
- Do they carry this out correctly?

Achieving the set goals requires appropriate expert advice and financial aid. The basic issues connected with the current status of the European cultural heritage and the involvement of public-private partnerships in its management are outlined as follows in professional literature (Neale 2012):

- Significantly reduced budget funds for cultural heritage management;
- Problems finding sufficient funding for restoration and maintenance;
- Devalued and dilapidated historical buildings and neighborhoods;
- Empty floor space in city centers and historical cores (office buildings, upper floors of shops, churches);
- Shrinking population, social segregation, and demographic changes in some cities.

Public-private partnerships play a positive role especially by promoting the following (Neale 2012):

- Creativity and new ideas;
- Entrepreneurial spirit and initiatives;
- Mutual trust between citizens and public institutions; and
- Responsibility and understanding.

5.16.1 RECOMMENDATIONS

Recommendations for promoting public-private partnerships in managing cultural heritage sites:

An Interdisciplinary, Participatory Approach and Active Role of the Third Sector

It is generally accepted that managing cultural heritage sites requires an interdisciplinary approach with the involvement of multiple players across the public, private, and nongovernment sectors, not only to maintain sustainable approaches, but also to develop them. The analysis of specific examples of carrying out public-private partnerships shows that the third sector (which can be defined as a civil initiative, civil society, non-profit organizations, or professional or public stakeholders) can have great influence on decisions at both public and private institutions, and that it can also have a significant influence on the professionalism and social acceptability of decisions.

Actions for Sustainable Management of Cultural Heritage Sites

»... conservation actions need to be embedded within social, environmental and economic development strategies that include financial mechanisms to encourage and facilitate public-private and third-sector contributions« (Macdonald 2011).

The Public Sector Must Not Withdraw Completely

Enhancing the private sector's role in managing cultural heritage sites merely in the form of privatization is not the right way to go because it can lead to complete morphological and functional change in structures and sites. The public partner should retain at least part of the role in the professional, financial, and organizational areas of management in order for the heritage to maintain its cultural value and remain within the domain of a wider public interest. In this, the private and public sectors, and often also the third sector, must retain their roles and perform their respective activities (Macdonald 2011).

Public-private partnership can take various forms when applied to the management of cultural heritage sites (summarized and abridged from Macdonald 2011, 898).

Public-private partnership type	Description
Buy-Build-Operate or Buy-Conserve-Operate	This type is closest to privatization. The private or third sector purchases the heritage asset. Government makes it subject to legislation and mandates conservation and maintenance standards.
Build-Own (Lease)-Operate-Transfer Back into the Public Domain	The private sector or third-party is responsible for conserving the historic structure, its operation, and management through a long-term lease. The public sector defines detailed heritage conservation criteria. After the terms of the lease have been fulfilled, ownership and all responsibilities are transferred back to the public sector.
Design-Build-Finance-Operate or Conserve-Build-Finance-Operate	The private sector is responsible for the conservation of historic assets, the construction or addition of new structures and the financing and operation of both. This typology is applicable to large-scale projects that extend beyond a single building or to buildings that require extensive renovations.
Finance Only	The project is funded directly by private sector or uses long-term leases or bonds.
Operational License	The private or third sector operates a service under contract or license at the heritage asset for a fixed term. The heritage asset remains in government ownership.

5.16.2 GOOD PRACTICES

Grainger Town Project, Newcastle upon Tyne, UK

Grainger Town occupies the majority of the historical core of Newcastle upon Tyne, and more than a third of its 640 buildings are protected for their special architectural or historic interest. The majority of these buildings date from the Middle Ages or the nineteenth century. The town center began developmentally and structurally lagging behind in the 1970s, when new shopping centers in the suburbs drew customers away and greatly affected the service sector. The crisis continued into the following two decades due to problems in local industry, growing unemployment, and people moving away. Professional services determined that 47% of the buildings were at risk and a further 29% vulnerable to becoming risk in the early 1990s. The city council and experts defined five basic issues: lack of economic confidence, under-use of buildings (100,000 m² of unused space above shops), poor quality of housing, fabric decay, and traffic congestion and environmental erosion caused by traffic. A public-private initiative for solving these issues was established in 1994. The holistically designed short-term project was expected to last six years.

The program allocated 60 to 80% of funding to the private sector for rehabilitating buildings at risk, activating buildings important in terms of economic prosperity, enhancing the area's economic power, activating unused upper floors, and providing new jobs. The traffic issue was solved by setting up an extensive pedestrian zone. In less than ten years the program increased the number of employees in the area from 5,000 to 6,500. The project included seven regeneration themes (Neale 2012; Pickard 2008e):

- Quality of environment;
- Business development and enterprise;
- New and renovated housing;
- Non-housing property development;
- Access to training and employment for the long-term unemployed;
- Arts, culture, and tourism;
- Management and promotion of the area.

Westergasfabriek, Amsterdam, Netherlands

This is an example of revitalizing an abandoned industrial complex. The previously polluted industrial site was transformed into a vibrant cultural park. Its changed function also indirectly revived the adjoining residential neighborhood that was losing residents due to pollution, an unattractive environment, and falling real-estate prices. Working together with the municipal authorities and local population was key for the project's vision and implementation. The cultural park at the abandoned industrial site is a temporary function that keeps the area developmentally active until the local community determines a more permanent development program. At the same time it helps reduce real-estate maintenance costs.

Westergasfabriek is currently the seat of two TV studios, a movie theater, a theater, an international school for creative leadership, a jazz club, eight restaurants, bars, and nightclubs. Westergasfabriek is a private company without any government funding or subsidies. The funds for the project's implementation were provided by the Dutch National Restoration Fund, which is an independent foundation that provides low-interest loans to all interested parties for restoring buildings. It also provides expert advice on how to carry out restoration work (Neale 2012).

5.17 MARKETING CULTURAL HERITAGE

(Maruša Goluža, Matjaž Geršič)

Marketing cultural heritage is a complex process that must follow the economic logic of marketing, while at the same time protecting cultural heritage and ultimately convincing consumers (i.e., tourists) to visit a specific destination. Thus cultural heritage becomes an inseparable part of tourism. Because tourism and cultural heritage go hand in hand, it also makes sense to join efforts when marketing them.

The increasing amount of tourism travel over the last decade has placed increasing pressure on cultural heritage sites. Therefore, in the future marketing cultural heritage will have to be even better thought out, taking into account the limitations imposed by both the cultural heritage itself and the local people, for whom cultural heritage is part of local or national identity.

Future tourism development will have to set sustainable goals that will contribute to both preserving and developing cultural values (Rosenfeld 2008, cited in Janšek 2010, 9). An individual site must be linked to historical events and periods, people, and culture. A story must be told that engages the audience and evokes respect, understanding, and pleasure. Tourists must be provided with all the necessary information that must be easily accessible. Websites must be translated into several world languages, the signs telling tourists where to go must be appropriately located and suitably designed, and tourist information centers must have all the necessary information that tourists need for their trip, including information on local and intercity transportation, accommodation, food, shopping, healthcare, and activities connected with natural and cultural heritage. It is vital to coordinate the interests of stakeholders (i.e., the main actors in tourism), economic development, and infrastructure planning and development (Rosenfeld 2008, cited in Janšek 2010).

The impact of tourism on cultural heritage may be positive or negative. It is positive when tourism develops and operates such that it encourages the protection of cultural heritage, preserves local culture, and provides funds for preserving local crafts, events, and so on. Tourism can also provide the impetus to revive forgotten customs and traditions that can be marketed to tourists arriving at a site, and it can also strengthen and shape cultural awareness because it raises locals' awareness that cultural assets have value and attract visitors. On the other hand, tourism can also have a negative impact on cultural heritage. This primarily refers to the danger of commercialization and loss of authenticity due to subordination and adaptation to visitors' preferences (Mihalič 2006).

From the viewpoint of tourism, cultural heritage plays a key role in attracting visitors (Misiura 2006), which is why marketing cultural heritage and the subsequent development of cultural tourism clearly has numerous benefits. In addition to promoting new jobs, it also generates profit and funds for heritage conservation. It helps preserve tradition and increase respect for cultural heritage and the awareness of its value among both locals and visitors. Despite the many advantages described, as a rule cultural tourism also has several negative consequences (e.g., potential damage to heritage sites). Therefore, marketing cultural heritage must be based on a balance: there should be as few negative impacts on cultural heritage as possible, but limitations on tourist visits must not threaten tourism activity (Sustainable Tourism ... 1999).

When cultural heritage becomes nothing but a commodity and when the main goal of the local people is to make a profit, one can talk about negative effects of tourism activity (Candela & Figini 2012). With an excessive market orientation, cultural heritage loses its uniqueness and authenticity (Sustainable Tourism ... 1999), and therefore participation of residents in strategic decision-making concerning tourism development and nature protection is vital (Candela & Figini 2012). Regardless of the appetite for development in tourism and visitors' expectations, cultural heritage marketing must first and foremost safeguard authenticity as the highest value, which needs to be more important than tourism development (Sustainable Tourism ... 1999).

Demarketing also uses an interesting approach to marketing cultural heritage. The idea of demarketing developed in the 1970s and refers to the aspect of marketing that seeks to discourage a specific

type of consumer (potential visitors to cultural heritage sites) for one reason or another from visiting a specific place. However, it must be noted that demarketing is not the opposite of marketing, but merely one of its forms. It makes sense to opt for demarketing when, for instance, a place loses its charm due to chronic overpopularity, which can reduce the quality of the visitor experience (Fullerton, McGettigan, & Stephens 2009). There are several demarketing methods, including (Wearing, Archer, & Beeton 2007) increasing the price of services, creating a queuing system to increase the time of the experience, limiting the main promotional strategy to selected and specialized media channels or selected markets, promoting the importance of the area through education, promoting the need to conserve the area through sustainable development, promoting alternative opportunities in surrounding areas that may satisfy needs and wants, highlighting the environmental degradation that could occur if too many people frequent the area, and highlighting any restrictions or difficulties associated with travel to the area.

Marketing cultural heritage is at the crossroads of marketing principles, the philosophy of sustainability, the requirements of cultural heritage protection and conservation, and tourism features. It combines several complex areas with goals of their own and thus a conflict of interest may easily develop between them.

Integrated marketing communications is an interesting marketing concept that suggests that a win-win situation can be achieved with regard to cultural heritage. According to this concept, marketing is an exchange in which both sides win (Internet 24). One could say that this involves a marketing relationship between a cultural heritage area (including its host community) and visitors.

However, a paradox occurs in cultural tourism: even though heritage is defined as part of tourism, it is managed following the principles of culture management. This is what usually causes a conflict of interest between the stakeholders. Culture management focuses on attracting a wide variety of target groups through heritage and heritage sites, ranging from loud and playful schoolchildren to art connoisseurs that want to experience works of art in peace and quiet (Sibila Lebe 2008).



JANEZ NARED

Figure 26: Souvenirs at the Old Bazaar, Skopje, Former Yugoslav Republic of Macedonia.

Taking into account all of the efforts aimed at protecting cultural heritage, a compromise between stakeholders and the goals of individual areas of expertise should be reached in marketing it. A combination of integrated marketing communications and demarketing could provide acceptable solutions in terms of both conservation and the economic logic of marketing.

5.17.1 RECOMMENDATIONS

Modern cultural heritage marketing primarily refers to sustainability in the sense of preserving the authenticity of heritage for future generations, both for the local population in heritage areas and visitors. Recommendations can be summed up in the following thematic groups:

Responsible Management of Heritage Sites; Interaction between Marketing and Cultural Heritage Conservation

A certain share of funds obtained from entrance fees should be allocated to marketing the cultural heritage site. This begins the cycle in which increased visitor numbers provide increasingly more funds for advertising and also conserving cultural heritage. Nonetheless, the majority of cultural heritage sites require »external« funding to begin developing promotional materials (Pedersen 2002).

Marketing Must Present Cultural Heritage as It Really Is

In order to attract more visitors, marketing often transforms cultural heritage elements into an adventure experience, but this should not change the reality (Wearing, Archer, & Beeton 2007). It is very important to interpret cultural heritage correctly. This ensures that potential visitors better understand it, which reduces unwanted impacts on cultural heritage, such as improper behavior at the site, destroying heritage, vandalism, and so on (Fullerton, McGettigan, & Stephens 2009).

Marketing Cultural Heritage Sites Should Be Designed and Used in a Regional Context

Tourism can be a useful factor in cultural heritage conservation and protection that can use the economic activities at the heritage sites for conservation purposes by providing funds, educating the community, and influencing the marketing policy. Marketing cultural heritage sites and related tourism activities also have great potential for developing the regional economy in other areas. As an important element of the regional economy, cultural heritage can be marketed together with other activities, which helps develop an integrated range of tourism services for the entire region and contributes to its economic prosperity (International Cultural Tourism ... 1999; Wearing, Archer, & Beeton 2007).

Research-Based Marketing

Various types of studies can be used to determine how many visitors can be accommodated at a heritage site and how the heritage structures should be used in order to avoid irreparable damage or the loss of its universal value. Based on analyses, the site can establish an appropriate conservation regime and define any limitations. Based on such analyses, managers can also decide what type of tourists they want to target. The marketing method can also be adapted to tourist target groups. Marketing can be roughly divided into large-scale attraction of tourists and selective marketing, which attracts a specific type of tourists based on the characteristics of the cultural heritage site. In selective marketing, the manager can also opt for demarketing (Fullerton, McGettigan, & Stephens 2009; Operational Guidelines ... 2013; Wearing, Archer, & Beeton 2007).

Successful Marketing Requires the Participation of as Many Stakeholders as Possible

The involvement and cooperation of local community representative, conservationists, tourism operators, owners, marketing policy planners, those preparing national development plans, and site managers is necessary to achieve a sustainable tourism industry and enhance the protection of heritage resources

for future generations (International Cultural Tourism ... 1999; Wearing, Archer, & Beeton 2007). Based on good relations among the stakeholders, an integrated range of tourism services can be prepared, and any disputes and threats to cultural heritage can be avoided.

Heritage Sites Must Have Appropriate Marketing Staff

Having appropriate staff that can combine the most important heritage elements into a story and successfully shape the site's tourism identity is extremely important for effective marketing of cultural heritage sites. Sites without sufficient staff must seek outside assistance (Pedersen 2002).

5.17.2 GOOD PRACTICE

Marketing Heritage in Tourism: The Case of the Škofja Loka Museum's Bobbin Lace Collection, Slovenia (Primožič 2010)

A marketing mix adapted to heritage and composed of a product, price, sales channels, marketing communications, people, physical evidence, processes, and expert bases forms the basis for marketing cultural heritage. A marketing mix designed in this way enables quality inclusion of heritage in the range of tourist products offered or its professionally indisputable marketing. The case of the marketing mix for the bobbin lace collection at the Škofja Loka Museum is presented as an example.

The basic purpose of the product (i.e., collection) is to professionally present all important component elements of bobbin lace-making, its general historical development, tools, accessories, setting, bobbin lace-makers, and the bobbin lace trade and users. In setting up the collection, the design of the existing collections at the museum, financial capacity, and target visitor groups had to be taken into account and the concept had to be adapted to all of this; in this particular case, the concept had an educational nature. The information provided is closely connected to the items displayed in addition to the main text and the pictorial and other preserved material. Special attention had to be directed to the visual image of the room, lighting, and the layout of display boards and display cases. In addition to the main product (i.e., viewing the collection), visitors had to be offered additional products that can turn into main ones over time (e.g., guided tours for individual target groups, temporary exhibitions, demonstrations and workshops, other events, museum souvenirs, and publications). There are several strategies one can use for setting the price of the main product. The most common is the strategy of differentiated prices, which involves different prices for children, adults, students, and groups. This strategy was also used for the lace collection (€2.50 for children, €3.00 for children guided tours, €4.00 for adults, and €4.20 for adult guided tours). The product can be sold through various sales channels – that is, direct (purchase at the entrance and online purchase) and indirect (at tourist information centers and travel agencies). In addition, the product itself can be sold directly or indirectly (i.e., as part of another product, such as a one-day trip to a specific destination). In the case of the collection presented, the purchase is direct and only possible at the museum entrance. Marketing communications for the product can take place through various media. Local and regional newspapers (Gorenjski glas) and the websites of the museum and municipality were used for the collection Bobbin Lace-Making in the Škofja Loka Region. In addition, the newsletters of various societies, associations, and other organizations whose activities are connected to the main product, and also general tourism material at the national level, can be used for this purpose. Direct marketing was based on written invitations to schools, societies, and association members. In order to promote the sales, free tickets were offered to the fiftieth and hundredth visitor, prize drawings were held, and so on. The prizes are connected with the main topics of individual exhibitions. Public relations is also very important. This was facilitated through study tours, open

house days, and providing updates on events. Individually targeted sale was used to obtain sponsors or donors for individual additional products and temporary exhibitions. People play an important role in marketing cultural heritage. The curator or ticket seller has the first contact with the visitor. The visitors themselves are also important because they can influence one another; for example, connoisseurs, who show greater interest in the collection, can influence other visitors by increasing their interest. The guides and demonstrators play an important role in additional products. The two remaining elements of the marketing mix include physical evidence and processes. Physical evidence involves placing an individual collection within the wider context of the museum as a whole, and processes involve administrative elements of the main product, such as the rule that visitors must pay the entrance fee at the ticket office.

5.18 CARRYING CAPACITY

(Joan Iliopoulou–Georgudaki, Loredana Alfarè)

In order to meet the requirements for sustainable development, the term »carrying capacity« is taken into account in almost every effort that aims at the sustainable growth of a system. The carrying capacity is the maximum level of human activity that organisms, ecosystems, natural resources, or cultural heritage sites can afford without provoking irretrievable damages for a long period. This particular pattern of strategic planning is a helpful tool for decision-makers in order to stimulate tourist growth in relation to environmental and cultural heritage sensitization. It could lead to a growth model that takes into account all aspects of human activity, enabling stakeholders to achieve further development in every sector possible (Site ... 2012).

The underlying principle of the carrying capacity model is that thresholds exist for all sites. The model brings about the identification of such thresholds in the bio-physical, sociocultural, psychological, and managerial environments. The carrying capacity model is commonly used in cultural heritage planning and often entails the definition of an optimum level for use of specific sites. Environmental and cultural impact assessments should be carried out before visitor centers, accommodations, roads, waste treatment and disposal, heritage trails, tourist shops, and other facilities are constructed.

If cultural impact assessments (Ruoss & Alfarè 2013) or other forms of impact and feasibility studies are not conducted prior to establishing the cultural heritage site as a tourist attraction, the cultural heritage site manager is advised to address the following issues in consultation with the host community, cultural heritage professionals, and tourism operators:

1. Physical: Is there enough space for development without harming the cultural heritage site (including preserving the visual setting and cultural fabric of the site) and/or the livelihood, quality of life, and character of the host community?
2. Ecological: Will growth or cultural tourism development destroy the natural system that helps give the cultural heritage site its character and ensure that the host community leads healthy and environmentally secure lives?
3. Cultural: Are local customs, practices, and traditions threatened by cultural tourism development? Do host communities have the resilience and capacity to negotiate external cultural influences without losing their unique characters? Will immigration of tourism and cultural heritage workers from places or origins external to the cultural heritage site and host communities permanently, severely, and negatively alter the local cultural fabric and structure?
4. Social: Is the community able to assimilate new residents and their demands for more, new, and better services? Will rising crime or health issues threaten the local community? Is there fear of losing control over new immigrants and external investors?

5. Economic: Can the local resources finance additional infrastructure needed for tourism? Are local funds available? Are national funds available? Is there a potential for other sources of funding? If so, is there a legal and practical framework for ensuring that funding will be used in ways that maintain a sustainable cultural tourism industry and not for political or personal gain (e.g., financial leaks to external investors and minimal local »trickling« of economic benefits)?

The determination and enforcement of a visitor threshold is extremely difficult but important. Although it is technically very difficult to establish limits or thresholds for the acceptable use of vital resources at cultural heritage sites, a good estimate and approximation should be established based on a resource review conducted professionally at the local level. Such thresholds and limits imply that cultural heritage use beyond these levels (based on current management and use parameters) could severely threaten the mid-term and long-term survival of the site and the standards of living and quality of life for the host communities. According to the Carrying Capacity Network (2014), the carrying capacity for any given area or cultural heritage site is not fixed. In fact, for some cultural heritage sites, the carrying capacity limits can be relatively rigid, whereas for others they may change over time. Carrying capacity may be altered by improved technology or better conservation practices, but mostly it is changed for the worse by pressures that accompany a permanent or seasonal increase in visitors. As the environment is degraded and the various natural or cultural resources are endangered or depleted, carrying capacity actually shrinks, leaving the cultural heritage site no longer able to support even the level of activity of the people that could have formerly lived in or visited the area on a sustainable basis. Whenever human activities surpass that carrying capacity, the results are adverse towards the environment and the diverse resources of the area, and in many cases they are irreversible (Site ... 2012).

The World Tourism Organization (1981) defines »tourism carrying capacity,« one of decisive carrying capacities in cultural heritage management, as »the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction.« A similar although not the same definition is also provided by Chamberlain (1997), who defines it as »the level of human activity an area can accommodate without the area deteriorating, the resident community being adversely affected or the quality of visitors' experience declining.« Although this seems like quite a clear concept, its practical application is not always straightforward, and what both these definitions have in common is that carrying capacity is the level where a tourist destination or attraction starts experiencing the negative effects that are a consequence of an unacceptably large number of visitors. Because cultural tourism usually represents a large percentage of the total tourism for an area, tourism carrying capacity is an important figure for the sustainable development of that area offering important cultural heritage as part of its tourist attractions. Addressing the sustainability problem from the cultural heritage point of view would thus mean that the cultural resources of an area do not face irreversible degradation problems; that is, the tourism carrying capacity of the area is not surpassed by the tourist activity in the area (Site ... 2012).

Regarding tourism, the selection of different systems, which require different emphasis on carrying capacity considerations, is crucial. In the case of historical settlements and towns (Coccosis et al. 2001), tourism is attracted to them as a result of the built cultural heritage, urban amenities, lifestyle and cultural traditions, cultural events, and so on. There can be several types of tourism in this category. Dominant mass tourism is associated with large numbers of visitors centering around monuments, museums, and so on, often with short stays (even daily visits), in which case carrying capacity issues center around congestion of facilities, traffic, urban land-use change, waste management, and so on. At the other end of the spectrum, in some other cases tourism in historic settlements could be more of the selective type associated with small groups of visitors and low pressures for development, in which case carrying capacity considerations could be limited to urban fabric change.

The implementation of tourist carrying capacity can be monitored by applying a set of indicators. While defining the carrying capacity, an initial set of indicators may be developed, finalized by follow-

ing the final decision on the carrying capacity of the total system. The whole process is dynamic and, because the carrying capacity is not a fixed concept, it should be regarded as a tool for guiding policy formulation and implementation towards sustainable tourism (Site ... 2012).

Despite its high theoretical value, the carrying capacity theory had practical and conceptual failures. The most fundamental failure in achieving its objectives was that it is intrinsically a quantitative term because it focuses on the question »How many is too many?« However, research has shown that many problems were a function not so much of numbers of people but of their behavior. Therefore, instead of searching for a numeric threshold, it is more important to monitor activities in the area or region as well as their impacts and deal with them.

»Limits of acceptable change,« on the other hand, dealt with a significantly different question: »What resource and social conditions are appropriate (or acceptable), and how do we attain these conditions?« This question represented a substantially different approach to thinking about development of an area or region, yet was actually more closely aligned with the thought of protecting the values for which an area was established than the carrying capacity paradigm. Thus, limits of acceptable change as a planning system was viewed as a way to confront and resolve the complex issues of managing tourists and visitors to the area to not only provide for the experiences they seek, but to deal with the problems of their social and biophysical impacts (McCool 1996).

It assesses the probable impact of an activity, decides in advance how much change will be tolerated, monitors what is happening systematically and regularly, and determines what actions are appropriate if agreed-upon quality standards are surpassed.

The limits of acceptable change framework was developed by Stankey et al. (1984, 1985) as a tool to manage recreational use in wilderness, but its utility extended far beyond that challenge. Today it is used as a powerful tool for making sustainable development plans for areas that gather large numbers of tourists, either for recreational, cultural, alternative, or any known type of tourism. It is thus highly relevant for cultural heritage management, providing a framework that may be used at the local or regional level in order to enhance local or regional development plans towards cultural heritage sustainability, taking into account international quality standards relevant to cultural heritage protection or built through a local participatory process involving the local population in the overall decision-making process.

Whereas carrying capacity focuses solely on determining the use level in an area and has a strict quantitative approach, the limits of acceptable change system tries to manage the actions that lead to changes in the desirable environmental and social conditions. At the point where these conditions are at the minimum acceptable level, then the level of use equals that of the carrying capacity of the region. The limits of acceptable change system calculates desired conditions, evaluates the current conditions, and by comparing them determines how much pressure the developmental actions impose on the area.

5.18.1 RECOMMENDATIONS

Since its conception, the limits of acceptable change framework has evolved into a nine-step process that may be utilized in more general issues of development. The nine steps are described below:

Identification of Area Concerns and Issues

Local policymakers and citizens should meet to identify what special features or qualities within the area require attention, what management problems or concerns have to be dealt with, what issues the public considers important in the area's management, and what role the area plays in both a regional and national context. This step encourages a better understanding of the natural, cultural, or economic resource base, such as the sensitivity of cultural and historic landmarks to tourism development, and a general concept of how the resource could be managed.

Definition and Description of Opportunity Classes (Zones)

Most areas or regions contain a diversity of cultural, social, natural, and economic conditions. As a result, the amount and type of development may vary throughout the area. Opportunity classes describe subdivisions or zones of natural or cultural resources where different social, resource, or managerial conditions will be maintained. These classes represent a way of defining a range of diverse conditions while remaining consistent with the general objectives for the area.

Selecting Indicators of Resource and Social Conditions

Indicators are specific elements of the resource or social setting that represent the conditions deemed appropriate and acceptable in each opportunity class. They must be easily measurable quantitatively and they are an essential part of the limits of acceptable change methodology because they reflect the overall condition throughout an opportunity class.

Inventorizing Resource and Social Conditions

Guided by the indicators in Step 3, the existing resources and social conditions of the area or region are inventoried and mapped in order to develop a better understanding of the area's constraints and opportunities. This inventory helps local policymakers establish realistic standards for development.

Specifying Standards for Both

In this step, we identify the range of conditions for each indicator considered appropriate and acceptable for each opportunity class in measurable terms. These are maximum permissible conditions and not necessarily objectives to be achieved.

Identifying Alternative Opportunity Class Allocations

The most important and attractive natural or cultural resource settings can be managed and developed in a variety of ways. This creates different types of alternatives, meaning that different opportunity classes can be addressed to the same area. This step creates a powerful tool in the hands of local policymakers, aiding them in developing the area or region in the most appropriate and also flexible way possible.

Identifying Management Actions for Each Alternative

Different alternatives and their acceptable conditions require different managerial schemes in order to be achieved. In this step, apart from identifying the most appropriate management actions, a cost analysis is performed for each alternative because the most attractive alternative might require such a huge commitment of funds that this makes it a non-viable solution.

Evaluating and Selecting the Preferred Alternative

With all the different alternatives and an estimation of the cost of each alternative, the local authorities can begin evaluating each course of action. This is done while taking into account several factors; namely, the responsiveness of each alternative to the area's concerns and issues as identified in Step 1, and the management requirements from Step 7.

Implementing Actions and Monitoring Conditions

After the preferred alternative has been selected, a development plan is created and put into effect. A monitoring program is extremely important for evaluating the entire process. This program focuses on the indicators selected in Step 3 and compares their current condition with that of the standards identified. If the conditions are deteriorating or not improving, complementary actions must be taken.

5.18.2 GOOD PRACTICE

Leopold Matrix

Dealing with indicators and enforcing limits of acceptable change standards in an area requires a methodology to present relevant data and measure impact. In order to present data that have to do with environmental impacts, there are many methods available. The best-known matrix methodology available for predicting the impact of a project on the environment is the Leopold Matrix. Although used for projects dealing with the natural environment, the usability of the Leopold Matrix can be extended to projects measuring impacts not only on natural resources but on other resources as well. In this context, it is applicable to cultural heritage resource preservation. In this context, the term environment in this chapter may be regarded in a wider sense not purely as the natural environment, but also the cultural and social environment of an area.

The Leopold Matrix (Leopold et al. 1971) is a qualitative environmental impact-assessment method that is used to identify the potential impact of an area development project on the environment. It involves the use of a matrix with 100 specified actions and 88 environmental items. The system consists of a matrix with columns representing the various activities of the project, and rows representing the various environmental factors to be considered. The intersections are filled in to indicate the magnitude (from -10 to +10) and the importance (from 1 to 10) of the impact of each human activity on each environmental factor.

Measurements of magnitude and importance tend to be related, but do not necessarily directly correlate. Magnitude can be measured in terms of how much area is affected by the development and how badly, but importance is a more subjective measurement. Although a proposed development may have a large impact in terms of magnitude, the effects it causes may not actually significantly affect the environment as a whole.

The Leopold Matrix is a two-dimensional matrix that cross-references:

1. Activities linked to the project that are supposed to have an impact on man and the environment.
2. Existing environmental and social conditions that could possibly be affected by the project.

The Leopold Matrix proposes a three-step process to estimate the impact:

First step: for all the interactions considered significant by the authors, the first step is to mark the corresponding boxes in the matrix with a diagonal line.

Second step: once the boxes with supposed significant interactions are marked, the author evaluates each box by applying a number from 1 to 10 (1 is the minimum and 10 the maximum) to register the magnitude of the interaction. This number is transferred to the upper left corner. It represents the scale of the action and its theoretical extent.

Third step: the final step for this method is to mark (from 1 to 10), in the lower right corner, the real importance of the phenomenon for the given project. It then gives an evaluation of the extent of the environmental impact according to the assessor's judgment.

The value 10 represents the largest magnitude, and the value 1 represents the lowest magnitude, whereas values near 5 represent impacts of intermediate magnitude. Assignment of a numerical value for the magnitude of an interaction is related to the extent of any change (e.g., if noise levels in a village were expected to increase by 20 dB(A), this is a large increase at night and may score 8 or even 9). The scale of importance also ranges from 1 to 10. The higher the value, the higher the importance; the lower the value, the lower the importance. Assignment of a numerical value for importance is based on the subjective judgment of the multidisciplinary team working on the EIA. Plus (+) or minus (-) can be used to show whether an impact is beneficial or adverse.

5.19 DEVELOPING RESPONSIBLE TOURISM IN THE COUNTRYSIDE USING LOCAL CULTURE AND CULTURAL HERITAGE

(David Bole)

One of the features of the modern economy is increasing demand for culture as a consumer good, and tourism is one of the greatest manifestations of cultural consumption (Richards 2005). The sudden increase in urban tourism in Europe in the 1970s and 1980s can be explained with the increase in cultural tourism. Tourists (i.e., consumers) want to get to know other cultures, but not only in the traditional form through visiting museums or galleries, attending concerts, and so on. They seek a comprehensive experience, in which culture is not merely part of an additional attraction in the form of attending a cultural event or visiting a cultural heritage site, but represents the largest part of a tourist product. Urban tourism continues to be one of the fastest growing forms of tourism, especially thanks to urban and regional planners, who realized that cultural tourism provides an opportunity for urban regeneration. Hence cultural (and especially industrial) heritage has become a tangible and intangible tourism cultural product (Lane et al. 2013).

According to Stebbins (1996), cultural tourism is a special form of tourism that is based on the need to seek and take part in cultural experiences (aesthetic, intellectual, emotional, or psychological). A subtype of cultural tourism is heritage tourism, which is based on the experiences provided by various forms of cultural heritage (Csapó 2012).

It seems that research articles and official documents connect rural tourism to culture and cultural heritage less frequently than urban tourism. Rural tourism is typically related to outdoor activities because its main purpose is to provide a temporary getaway or »escape« from urban and suburban areas to an environment that is considered rural (Lane et al. 2013). Similar to urban tourism, rural tourism began developing out of necessity, especially due to farmers' needs to diversify their activities and seek additional income (Lane et al. 2013). Commercialization and commodification of the countryside is part of the general economic transformation of society from production to consumption, and rural tourism has become a »creative« solution to many issues the countryside is facing today (Horáková 2013).

According to Richards (2005), cultural tourism is promising and continues to grow. According to the OECD (The Impact ... 2009), the share of cultural tourism in the entire tourism sector is 40%, with more than 350 million cultural tourists recorded in 2007. Cultural tourism first and foremost generates economic profit, but recently the role of sustainable rural tourism has been highlighted because it can contribute to preserving traditional cultural landscapes and cultural heritage (Shannon Peckham 2003) and is also useful from the viewpoint of social cohesion.

Endogenous development is a concept based on local or regional development opportunities and is a type of a local response to global challenges (Vázquez-Barquero 2007). Every local or regional area contains a unique set of partial potentials (arising from its historical and sociocultural development, labor force, environment, technology, and institutions) that together create the overall development potential of a specific area (Nared 2007). The typical culture of a specific area can contribute to the area's endogenous development because it is part of the local environment, specific, and usually connected with the area's natural features, and can represent a competitive advantage compared to other areas. In this regard, culture (in its broadest sense) and cultural heritage can be defined in terms of its economic, sociological, ecological, and creative/intangible development potential; in addition, it can also be defined in terms of its value. This is where the definition of the concept »cultural value« originates from; this definition emphasizes the development potential of various forms of culture and cultural heritage of a specific area (Šmid Hribar & Ledinek Lozej 2013).

Economic potential is directly shown in generating income from marketing culture, and creating jobs and additional income for farms, societies, companies, and tourism operators; in addition, its indirect economic potential is also important (Šmid Hribar et al. 2012). Social potential is reflected in the number of people taking part in managing a specific value, the structure of this social group (e.g., including

vulnerable social groups), and the area's social cohesion, external representation, and internal identification. Ecological potential can be seen in environmental sustainability because managing and marketing values can also lead to protecting traditional cultural heritage, such as protecting wild daffodil meadows and renovating cultural heritage structures for tourism purposes. Creative/intangible potential can be seen especially in reviving specific cultural traditions for tourism purposes, which can stimulate personal creativity, artistic re-creation, and purely personal identification with one's environment and its history (Šmid Hribar et al. 2012).

Responsible tourism is not a new type of tourism, but merely a concept that was created by prioritizing the environmental aspect of sustainable tourism over the economic and social aspects. The concept began to be used twenty years ago in the sense of developing non-mass forms of tourism, such as eco-tourism, alternative tourism, green tourism, and so on (Leslie 2012). In recent years, a number of manuals have been produced on how to carry out responsible tourism practices, which primarily emphasize the social aspect of tourism development within the context of environmental sustainability (e.g., Goodwin 2011). Responsible tourism highlights the benefits for the local community and advocates social justice, respecting human rights, and ethics in tourism development, which is why some also refer to it as »ethical tourism« (Goodwin & Francis 2003). Responsible tourism recognizes its impact on tourism destinations and seeks to manage it such that it optimizes the positive impacts and reduces the negative impacts of tourism. At the Encuentros conference held in Portorož in 2012, Stroma Cole of the University of the West of England stated that responsible tourism is based on the equality, fairness, and responsibility of all stakeholders taking part in tourism development. Responsible tourism has thus become an important concept not only in academic circles, but also within the tourism industry (Internet 25).

With this conceptualization, tourism can in fact become a tool for promoting the endogenous development of local communities because it stimulates local initiative and encourages local tourism operators to develop according to their own ideas and at their own pace. The local community becomes involved in developing and managing tourism products, recognizing its own benefits in this. The main groups of stakeholders include tourists, the local community, the public sector, and tourism operators. Economic profit is an important goal, but not the only goal of responsible tourism. Some researchers argue that when profit becomes the only motivation in tourism it causes more harm than good to the local community. It is better if tourism develops out of necessity and as a tool or method facilitating the social and economic development of a specific region (Scheyvens 1999). Responsible tourism is also important from the viewpoint of preserving cultural heritage because its goal is to avoid the excessive use of heritage for marketing purposes, and especially the folklorization of intangible culture and excessive use and destruction of tangible cultural heritage (Responsible Tourism ... 2013). Community tourism thus prioritizes the social dimensions of tourism development over environmental and economic impacts.

5.19.1 RECOMMENDATIONS

Recommendations or steps for developing responsible tourism in the countryside using local cultural values:

Identifying and Including Key Stakeholders

Identifying and including the most important stakeholders is key for the development of responsible tourism. These stakeholders include representatives of the local community, tourism operators, tourists, public institutions, NGOs, social movements, and other individuals that see their own and wider (social and economic) interest in the development of responsible tourism.

Defining the Vision and Specific Goals, and Inventorying Cultural Potentials

In order to kick-start this process, it is often necessary to obtain some »external« stimulation; for instance, from public or research institutions, which can encourage the local community to think about how to

switch from culture and cultural heritage to cultural values. In this way the local community begins to evaluate the development potential of its culture and heritage, and expresses its interest in developing a tourism product connected with this.

Selecting Cultural Values and Forming a Core Stakeholder Network

This step reveals the first results of the bottom-up approach because the representatives of the local community select those cultural values that make it possible to develop a tourism product within an acceptable timeframe. A core network of stakeholders is then set up for each of these values that develops the idea and turns it into a commercial product.

Strategic Planning of Tourism Products and Taking Responsibility for Their Implementation

In this step, stakeholders must think about how they can offer a specific cultural asset as a tourism service. They must think about what they can offer visitors, what their goal is, and what results they expect to achieve within a specific timeframe and financial scope. An action plan with a list of all tasks and activities required to prepare and implement the tourism product must be drawn up, and assignments and responsibilities of individuals, societies, SMEs, and municipalities must be defined.

Implementing All of the Activities Above

This is a key stage in developing tourism products, in which professionals no longer play a key role. The final success depends on the local stakeholders, their active participation in carrying out the action plan, and ability to secure funds for the product implementation.

5.19.2 GOOD PRACTICE

Developing Responsible Tourism in Črni Vrh, Municipality of Idrija, Slovenia

Črni Vrh in the Municipality of Idrija, Slovenia is one of the pilot areas in which activities have been underway since 2011 as part of the transnational project SY_CULTour, with which the locals sought to create tourism products related to their culture and to their cultural and natural heritage. This is a rural area, where most people work in the nearby industrial towns (Kladnik 2011). At the same time, the population there is stagnating and aging (Fridl & Repolusk 2011). Črni Vrh is a good example of seeking new developmental paths using culture and cultural heritage based on a method that takes into account the principles of responsible tourism and, most importantly, the participation of the local community.

Steps 1 and 2 of the project entailed defining a vision and specific goals, and the basic outline of sites with cultural assets, and identifying key stakeholders. They were carried out in the form of a workshop, which was attended by a wide range of local stakeholders (local community leaders, restaurant and café owners, representatives of cultural and sports societies, and individuals). The participants identified twenty-two cultural values.

This was followed by selecting the cultural values and forming a core network of stakeholders (Step 3) that were more intensely involved in the project. Among the twenty-two cultural values identified on the Črni Vrh Plateau, the stakeholders selected the following six cultural values that made it possible to design a tourism product within an acceptable timeframe:

- Stargazing at the astronomical observatory;
- Reviving flax production and processing;
- The Trnovo Marathon sports and cultural event;
- The Matuckar Ethnographic Trail;
- The First and Second World War Museum;
- The Idrija narrow gauge railway line: an old Italian military railroad from the First World War.



BOJAN ERHARTIČ

Figure 27: Hikers in Črni Vrh, Slovenia.

The first results of the bottom-up approach were visible in this step: the local community representatives selected cultural values that the »external« experts did not even consider. The next step, which was carried out in smaller groups, entailed strategic planning of tourism products and taking responsibility for their implementation (Step 4). It turned out that, in planning tourism products, the local community primarily thinks not only about economic benefits, but also takes into account conserving the cultural landscape and heritage (e.g., reviving flax production and processing, or the First and Second World War Museum collection) or their personal psychological and sociological impulses (e.g., the Trnovo Marathon).

In Črni Vrh, the implementation of certain tourism products is currently underway (Step 5), a brochure is being prepared as part of the Idrija Geopark, and signboards are being set up on the Matuckar Trail and next to other cultural assets.

5.20 MONITORING AND EVALUATION IN MANAGING CULTURAL HERITAGE

(Janez Nared, Primož Pipan)

Monitoring and evaluating the management of sites, cultural heritage, or any other activity is an important part of a program cycle that roughly consists of planning, implementation, monitoring, and evaluation. Monitoring can be defined as a continuous process of regular data collection in order to detect all deviations from the goals set. It is used to obtain important data that guide further activities and is also vital for carrying out evaluation. In the case of cultural heritage management, the purpose of monitoring is

to assess how a heritage site is managed and to measure whether the goals of the management plan for that site have been fulfilled. Monitoring the progress and the activities carried out is key for the ability to adapt and make improvements in management, and also helps when judging priorities in light of the progress made and changed conditions (*Managing Cultural World Heritage* 2013; Nared & Ravbar 2003).

The monitoring system is composed of collecting and analyzing financial, statistical, and project data using appropriate indicators as a means of measuring the success of carrying out activities and measures, establishing suitable supervisory bodies and their operation, and all types of reporting. Due to its great importance and in line with the Operational Guidelines (2013), monitoring is a mandatory component of the key documents used in the process of nominating cultural heritage sites, adding them to the list, and regularly reporting on their state. Accordingly, during the nomination process itself, countries must prepare the key indicators for measuring and evaluating the state of conservation, factors that affect heritage, and protective measures, and they must define the frequency of measurements and the institution responsible for the measurements.

The data collection system must be included in the management system to enable regular monitoring. Here it is possible to rely on the data that are already being collected, but it must be ensured that they suit their purpose.

Monitoring at world heritage sites strengthened significantly in 1999; since then, considerably higher-quality data have been required for the application and selection process. These data form an important basis for later monitoring and evaluation. This has been additionally reinforced by the Statement of Outstanding Universal Value, which clearly defines why an individual unit was entered on the list and which criteria it fulfills in addition to the requirements regarding authenticity, integrity, protection, and management. Thus this statement is also an important reference document for monitoring, periodical reports, reactive monitoring, entry onto the List of World Heritage in Danger, or possible removal from the list (*Preparing World Heritage ...* 2011).

The monitoring system is based on a selection of indicators that are used to measure changes. These changes reflect general development tendencies and conscious influence on development via various development measures and instruments. If changes occur in a specific structure, this can result from spontaneous processes or planned development activities that should lead to a desired state in the area surrounding the cultural heritage or the cultural heritage itself. A good indicator should therefore detect the performance of any activity and make possible analysis that shows the degree to which the goals set have been achieved.

An indicator can be defined as a measure of planned goals realized, sources mobilized, and effects planned that provides quantified information in order to help plan activities, make decisions, and guide those responsible in carrying out activities (Selection ... 1999). It is a sum of measures of a specific variable in space and time.

Indicators must have a good methodological basis, and ideally (Nared & Ravbar 2003; *Managing Natural World Heritage* 2012) they should be:

- Specific: selected indicators should be adapted to the activity and suit the purpose they were selected for;
- Measurable: they must be measurable, which can be most easily achieved if they are quantified; it is also important to ensure adequate measurability of qualitative indicators;
- Accessible: they must be accessible either at a specific time or for a specific territorial unit;
- Realistic: they must be based on realistic assumptions both in terms of the goal set and the indicator's suitability; they should reflect long-term changes rather than short-term or localized fluctuations;
- Clear: all users must be able to understand them; it is vital that they be defined unambiguously and that the methods of calculating and acquiring data also be clearly defined;
- Reliable: their measurement must be reliable;
- Time-specific: they must reflect developments over a specific period;
- Cost-effective: they must be easy to access and, ideally, part of regular statistics.

Indicators must make it possible to measure and assess the state of cultural heritage conservation, the factors that affect it, and the protective measures for preserving authenticity and integrity (*Managing Cultural World Heritage* 2013).

The manual *Managing Cultural World Heritage* (2013) defines monitoring at cultural heritage sites as general monitoring of the success of management systems, in which achieving administrative goals, the effectiveness of processes, and cost effectiveness are at the forefront, and monitoring the results of management systems, which monitors the state of the heritage site and whether it is appropriately protected, whether there are any changes affecting its authenticity and integrity, environmental conditions, the degree of physical deterioration, the level of social inclusion, and so on. Thus monitoring focuses on whether the management system is effective and whether the state of the cultural heritage site is deteriorating or improving; the ultimate goal of monitoring is to ascertain whether the outstanding universal value of the cultural heritage site is appropriately protected.

On the one hand, the monitoring defined above points to the management process, and on the other it measures the effects of its implementation. Both ways contribute to more effective use of funds, help prepare and improve the system of documentation and collecting data, improve the response to changed conditions, and so on. In addition, monitoring must take into account various heritage conservation approaches and various regional and cultural contexts. Where possible it should be based on systematic methodology in order to exclude subjectivity and make it possible to periodically repeat the monitoring process. The data may include photos, videos, detailed plans, interviews, and reports, with well-documented baseline data that make possible all later comparisons (*Managing Cultural World Heritage* 2013).

In order for data collection to achieve its purpose during monitoring, the data must be appropriately analyzed. This creates important information for decision-making and a basis for evaluating the activities and processes carried out. Evaluation is an ongoing interactive process that makes it possible to plan activities prudently and carefully and to adapt them to changing conditions and needs. The evaluation concept must rely on the structure of the management plan, whose definitions of urgently needed development tasks proceed from issues detected in a specific area or cultural heritage site. Based on these issues, detailed and, ideally, quantified objectives and the strategy for realizing them must be drawn up. An indicator must be assigned to every objective in order to verify the success of carrying out the activities set. Objectives are reached through various activities that are defined in detail and financially evaluated in the development program. It is important to know whether the path selected is the only one possible or the most effective for reaching the objective set and what the costs of this path are compared to the alternatives. Therefore, it makes sense to examine the effects of individual measures and select the most appropriate ones (Armstrong & Taylor 2000).

The purpose of evaluation is to ensure effective use of public funds, check the reasons for public intervention, analyze success stories, and prevent wrong decisions in the future (Evaluation Design ... 1999). In addition, evaluation defines the reasons for the success or failure of a specific program or policy, which ensures that the measures and instruments selected are adapted to the circumstances.

Managing cultural heritage sites should include ex-ante evaluation in order to examine whether the management plan prepared suitably responds to the challenges of the area or site, ongoing evaluation in order to analyze the course of activities and form guidelines for future operations, and ex-post evaluation, which is carried out after an individual management period in order to study all the results achieved in relation to those planned. In connection to context indicators, ex-post evaluation is also an opportunity to define new goals and strategies for realizing them.

Evaluation primarily focuses on the following:

- The relevance of the management plan, which shows whether the goals set reflect the needs and priorities of cultural heritage conservation;
- The effectiveness of the management plan, which reflects its financial effectiveness in the sense of the ratio between expenses and profit, and reveals how inputs change into effects;
- The success of the management plan in achieving the goals set;

- The usefulness of the management plan, which reveals how the plan has affected the target group or population in terms of its needs; and
- The sustainability of the management plan, in which the anticipated duration of the effects of activities carried out is analyzed (Indicators ... 1999).

The main focus must be on success and effectiveness because both of these factors are suitable for analyzing the state at any stage of the activities being carried out. They also provide useful information to managers and their evaluators for making the best possible decisions (Indicators ... 1999).

5.20.1 RECOMMENDATIONS

The recommendations provided by the manual *Managing Cultural World Heritage* (2013) could be grouped into the following steps:

Prepare a Monitoring Plan

To ensure efficient monitoring of the cultural heritage related processes, a »monitoring plan« that is directly linked to sustaining values and, in the case of world heritage, to the outstanding universal value in particular, should be designed. It should define how much detail the monitoring should go into to adequately respond to the needs of the stakeholders, and what the basic principles of monitoring are in terms of the indicators selected (basic characteristics of indicators, methodology for their calculation, source, institution responsible for collection of indicators, etc.), data to be used and frequency of their renewal, and connection of data with specific steps in the evaluation process (Indicators ... 1999).

When developing a monitoring plan, the following should be considered:

- »• Define objectives to clarify why monitoring is being carried out.
- Link objectives to indicators to be monitored and, where possible, identify thresholds for each indicator.
- Gather relevant material (publications, reports on previous activities including monitoring).
- Identify collection methods for existing data (e.g., archive consultation) and data from new sources (e.g., sampling, interviews, observation) and define frequency of data collection.
- Standardize and simplify procedures to limit drain on resources and optimize safety procedures in these three areas:
 - Data collection;
 - Data analysis;
 - Data management which must include past results, current trends and future forecasting and record changes in approach to monitoring over time.
- To understand trends that emerge from monitoring and the appropriate management response and its timing, identify the timeframe of the occurrence (one-off or rare; intermittent or sporadic; frequent or ongoing/repeating monitoring), the area affected and the gravity of their impact on attributes critical to heritage values, in particular the Outstanding Universal Value.
- In the case of World Heritage, try to align your monitoring plan with the Periodic Reporting questionnaire.« (*Managing Cultural World Heritage* 2013, 97.)

Apart from this, a monitoring plan should clearly define the institutions responsible for data collection and the protocols for maintaining the monitoring databases.

To fully use existing resources, development of a monitoring plan should carefully consider data sources that already exist, alternative methods to ensure cost-effective monitoring, involvement of the local community in monitoring, and so on (*Managing Natural World Heritage* 2012).

Ensure Long-Term Monitoring

To allow evaluation of long-term processes, each heritage site and each property should be monitored continually because data can help track trends effectively when gathered and assessed systematically over a long period of time. To this end, strong commitment of involved institutions and a permanent

source of funding are needed. At the same time, long-term monitoring processes enhance capacity-building at all levels (individuals, institutions, communities, and networks) and broader engagement of all stakeholders and communities in the monitoring process (*Managing Cultural World Heritage* 2013).

Provide an Optimal Set of Indicators

A set of indicators, which may include quantitative or qualitative indicators, should fully address the concern of long-term preservation of cultural heritage by providing a basis to monitor the state of a property, its surroundings, and the relationship with stakeholders and identifying any changes. Indicators should ideally (*Managing Cultural World Heritage* 2013, 96):

- Be limited in number.
- Be sensitive to change and thus able to illustrate whether management actions are having an effect.
- Have a clear and measurable relationship to the trend being monitored.
- Reflect long-term changes rather than short-term or local variations.
- Address diverse areas subject to change and known pressures that can have direct implications for the property's management, including social, cultural, economic, environmental, and political trends.
- Detect new pressures.
- Require monitoring procedures that are as simple and cost-effective as possible both in terms of approaches to information collection, information analysis, interpretation, and management and in terms of ease of access for data collection, and as far as possible using data that are already being collected.
- Be associated with clear baseline data, referring the starting condition of a particular element to be measured/monitored; for example, the number of visitors at the beginning of the project implementation).
- Be associated with clear thresholds that, when reached, trigger an action in the management system; for example, if visitor numbers to a specific area of the site reach a certain intensity, rotational opening is automatically introduced in order to reduce wear and tear on exposed features.
- Be identified and monitored in a participatory way, especially when the process can improve the performance of the management system and its outcomes in a way that can benefit those interest groups.

Take Evaluations Seriously

Evaluations that are based on a good monitoring system are an efficient tool for improving cultural heritage management in terms of its everyday activities, and above all in terms of long-term preservation of the cultural heritage and its surrounding area. Evaluations should give clear indications on what to improve and how to improve, as well as directions for future activities at the cultural heritage site. Ex-ante evaluations enable further adaptation of the activities to the specific situation at the cultural heritage site, ongoing evaluations can correct/reshape insufficient measures, and ex-post evaluations could give clear directions on how to continue and what to do differently based on past experience.

5.20.2 GOOD PRACTICE

Venzone, Italy

The town of Venzone is the seat of the Municipality of Venzone, which is located on a plain on the left bank of the Tagliamento River, 35 km north of Udine, Italy. The historical core inside the city walls was declared a cultural monument of national importance in 1965 (Bellina et al. 2006). Between 1965 and 1976, the Regional Inspectorate for Cultural Heritage inventoried, measured, sketched, photographed, and cataloged all of the movable and immovable cultural heritage. The photo documentation was last updated in February 1976, two months before the first Friuli earthquake. The earthquakes on 6 May and 15 September 1976 with their epicenter in Venzone claimed 939 lives and 157,000 people were left without a roof over their heads (Geipel 1982). The same earthquakes did not claim

any lives in Slovenia; however, 12,000 buildings were damaged and 13,000 people were left without a roof over their heads (Orožen Adamič 1980).

All of the data were collected homogenously in Venzone and centralized in a shared catalog, which included the entire heritage in all private buildings, churches, and public buildings in one place. This was an essential advantage over other Italian towns, where the greatest problem in these types of cultural heritage inventoring and cataloging is a multitude of various public and private institutions, among which each one tends to only be responsible for one heritage segment and in the case of heritage protection they may even compete against each other (Di Bernardo 2008). The Friends of Venzone Association (It. Associazione amici di Venzone), established in 1971, contributed extensively to raising awareness of cultural heritage among the residents and within the wider international community through its numerous expert and research publications.



Figure 28: Proper documentation makes restoration easier: the case of Venzone, Italy.

In the two earthquakes, forty-seven people were buried under the ruins in Venzone and only few buildings were left standing (Bellina et al. 2006). The restoration of the protected historical core within the city walls focused on restoring cultural heritage. It was decided that the historical center should be restored in line with earthquake-safe technical solutions that should follow the original designs as closely as possible.

The renovated Orgnani-Martina Building now houses the Documentation Center for Territory and Cultural Assets (Ital. Centro di documentazione su territorio e beni culturali). The documentation department keeps numerous written and recorded oral sources, articles, and photos that are important for studying the Friuli earthquake. The educational department, which serves school audiences, shows everything in connection with the earthquake and its impact as a natural process and disaster in a clear and transparent way. It is visited by at least 300 classes or approximately 6,000 students each year (Di Bernardo 2008). On 19 September 2009, thirty-three years after the earth-

quake, a permanent exhibition titled *The Earthquake* (Ital. *Tiere Motus*) was opened at the palace. Among the numerous interactive audiovisual displays of the earthquake and its consequences, the earthquake simulator and a virtual model of the collapse of the Venzone cathedral on the night of 6 May 1976 stand out the most (Medeossi 2009). In addition to its cultural and social aspects, the restored historical core of Venzone has an important economic function in terms of tourism; it is visited by up to 200,000 tourists each year. The medieval pumpkin festival (Ital. *Festa della Zucca*) has the largest number of visitors each year (70,000); the festival has been held by Pro Loco Venzone since 1991. Venzone has accommodations for up to 200 tourists and has 27,000 overnight stays a year (Di Bernardo 2008; Pipan 2011).

6 SOURCES

- Aaker, D. 1991: *Managing Brand Equity, Capitalizing in the Value of the Brand Name*. New York.
- Abels, G. 2007: *Citizen Involvement in Public Policy-making: Does it Improve Democratic Legitimacy and Accountability? The Case of pTA*. *Interdisciplinary Information Sciences* 13-1. Sendai.
- Alegre, H., Baptista, J. M., Cabrera, Jr. E., Cubillo, F., Duarte, P., Hirner, W., Merke, W., Parena, R. 2006: *Performance indicators for water supply services, second edition, Manual of Best Practice Series*. London.
- Aleksič, I. 2008: *Destinacijski management – destinacija Dolenjska*. Diplomaska naloga, Ekonomska fakulteta Univerze v Ljubljani. Ljubljana.
- Alfarè, L., Ruoss, E. 2007: *Networking: a key element for sustainable development*. Interreg IIIC – RFO INNOREF. Internet: http://ec.europa.eu/regional_policy/conferences/od2006/doc/articles/networking_in_innoref.pdf (4. 12. 2007).
- Altia helps to preserve Saaremaa Island's windmill heritage. 2014. Internet: <http://www.mynewsdesk.com/altia/news/altia-helps-to-preserve-saaremaa-island-s-windmill-heritage-83212> (7. 5. 2014).
- Application form 2010: *Enhancement of Cultural Heritage through Environmental Planning and Management – CHERPLAN*. Udine.
- Armstrong, H., Taylor, J. 2000: *Regional Economics and Policy*. Oxford.
- Arnkil, R., Spanga, T. 2003: *Evaluation, dialogue and learning in multi-stakeholder settings. Challenges for evaluation in an enlarged Europe*. Budapest.
- Arnstein, S. R. 1969: *A Ladder of Citizen Participation*. *Journal of the American Institute of Planners* 35-4. Cambridge. DOI: 10.1080/01944366908977225.
- Ashworth, G. J. 2008: *How do tourists consume heritage places*. *Cultural heritage and tourism*. Department of Cultural Heritage under Ministry of Culture. Vilnius.
- Beach, T., Dunning, N., Luzzadder-Beach, S., Cook, D. E., Lohse, J. 2006: *Impacts of the ancient Maya on soils and soil erosion in the central Maya Lowlands*. *Catena* 65-2. Amsterdam.
- Bellina, A., De Colle, A., Moretti, A., Quendolo, A. 2006: *Venezia – La ricostruzione di un centro storico*. *Bollettino dell'associazione »Amici di Venezia«* 35. Venezia.
- Bergant M., Dolinšek B. 2013: *Utrjevanje kamnitih in opečno-kamnitih zidov z injektiranjem*. Ljubljana. Internet: <http://www.gi-zrmk.si/images/TC/9%20%C4%8Dlanek.pdf> (22. 1. 2013).
- Bessiere, J. 1998: *Local Development and Heritage: Traditional Food and Cuisine as Tourist Attractions in Rural Areas*. *Sociologia Ruralis* 38-1. Toulouse.
- Bigaran, F., Corrado, S., de Luzenberger, G., Mazzola, A. 2013: *The participatory approach in the SY_CULTour pilot project »From the tradition to the production – the sustainable use of cultivated and wild medicinal and aromatic plants in the context of rural tourism«*. *International Networking Conference of Sy_CULTour project*, Heraklion, 17th and 18th of October 2013, unpublished material.
- Big Belly Solar Compactor. 2014. Internet: <http://www.bigbellysolar.co.uk/products/big-belly-solar-com-pactor> (8. 4. 2014).
- BigBelly Solar Keeps Bath Clean. 2014. Internet: www.bigbelly.com/bath (11. 4. 2014).
- Bilitewski, B., Härdtle, G., Marek, K., Weissbach, A., Boeddicker, H. 1994: *Waste Management*. Berlin, Heidelberg.
- Bixio, D., Thoeve, C., Koning, J. D., Joksimovic, D., Savic D., Wintgens T., Melin T. 2005: *Wastewater reuse in Europe*. *Desalination* 187. New York.
- Bizjak, M. 2012: *Socialno podjetništvo tudi na Idrijskem*. ICRA. Internet: <http://www.idrija.si/novice/obvestila-arhiv/2462-socialno-podjetnistvo-tudi-na-idrijskem-in-cerkljanskem-projekt-moja-stacu-na-je-bil-izbran-na-javnem-razpisu-za-spodbujanje-razvoja-socialnega-podjetnistva.html> (13. 11. 2012).
- Bogataj, J. 1992: *Sto srečanj z dediščino na Slovenskem*. Ljubljana.
- Bole, D. 2008: *Cultural industry as a result of new city tertiarization*. *Acta geographica Slovenica* 48-2. Ljubljana. DOI: 10.3986.AGS48202.

- Borysova, O., Kondakov, A., Paleari, S., Rautalahti-Miettinen, E., Stolberg, F., Daler, D. 2005: Eutrophication in the Black Sea region: Impact assessment and Causal chain analysis. Kalmar.
- Brezovec, A. 2004: Destinacijski menedžment – celovito upravljanje turizma v kraju, spet »samo« branding ali še huje: le predmet trženja organizatorjev potovanj? Turizem, časopis za menedžment in trženje v turizmu 71. Ljubljana.
- Bromhead, E. N., Ibsen, M.-L. 2006: A review of landsliding and coastal erosion to historic fortifications in South East England. Landslides 3-4. Berlin.
- Bruun, M. 1999: Landscape planning approaches and challenges regarding the development of cultural landscape. Kulturna krajina v dinamiki razvoja in varstva: Zbornik 6. letnega strokovnega srečanja Društva krajinskih arhitektov Slovenije. Portorož.
- Buone pratiche nella gestione dei rifiuti. 2014. Internet: [http://www.wasman.eu/media/uploads/deliverables/BEST_PRACTICES_REPORT_\(ITALIAN\).pdf](http://www.wasman.eu/media/uploads/deliverables/BEST_PRACTICES_REPORT_(ITALIAN).pdf) (11. 4. 2014).
- Burian, J. S., Nix, S. J., Pitt, R. E., Durrans, S. R. 2000: Urban Wastewater Management in the United States: Past, Present, and Future. Journal of Urban Technology 7-3. Basingstoke.
- Candela, G., Figini, P. 2012: The Economics of Tourism Destinations. DOI: 10.1007/978-3-642-20874-4. Carrying Capacity Network. 2014. Internet: <http://www.carryingcapacity.org/> (13. 5. 2014).
- Chamberlain, K. 1997: Carrying capacity. UNEP Industry and Environment, No. 8, January–June 1997. UNEP, Paris.
- Chen, A. 2001: Using free association to examine the relationship between the characteristics of brand association and brand equity. Journal of product & brand management 10-7. Santa Barbara.
- Coccosis, H., Mexa, A., Collovini, A., Parpairis, A., Konstandoglou, M., van der Straaten, J., van der Borg, J., Trumbic, I. 2001: Defining, measuring and evaluating carrying capacity in European tourism destinations. Laboratory of Environmental Planning, University of the Aegean, Mytilene.
- Conesa, H. M., Schulin, R., Nowack, B. 2008: Mining landscape: A cultural tourist opportunity or an environmental problem? Ecological economics 64. New York.
- Construction Extension to The PMBOK Guide – Third Edition. Project Management Institution, Philadelphia, 2007.
- Convention Concerning the Protection of the World Cultural and Natural Heritage. United Nations Educational, Scientific and Cultural Organization, Paris, 1972.
- Convention for the Protection of the Architectural Heritage of Europe. 1985. Internet: <http://conventions.coe.int/treaty/en/treaties/html/121.htm> (28. 3. 2013).
- Csapó, J. 2012: The role and importance of cultural tourism in modern tourism industry. Strategies for tourism industry – micro and macro perspectives. Rijeka, Shanghai, New York.
- Cultural Heritage and Development. A Framework for Action in the Middle East and North Africa. The World Bank. Washington, D.C., 2001.
- Cultural Heritage as a socio-economic development factor. Actions to Regenerate Cities and Help Innovative Mediterranean Economic Development Enhancing Sustainability. 2007. Internet: <http://www.med-pact.com/Download/Archimedes/11%20Introduction%20Paper%20Cultural%20Heritage%20and%20Ec%20Dvlprmt.pdf> (10. 5. 2013).
- Čepeljnik, M. 2006: Uporaba javno-zasebnega partnerstva v Evropski Uniji. Specialistično delo, Ekonomska fakulteta Univerze v Ljubljani. Ljubljana.
- Daisi, Y. 2005: Sustainable development of (UNESCO) heritage sites in China and the Netherlands: Case studies of Lijiang, China and Amsterdam, the Netherlands. Land Use Planning Chair Group, Wageningen University. Wageningen.
- Davison, A., Howard, G., Stevens, M., Callan, P., Fewtrell, L., Deere, D., Bartram, J. 2005: Water Safety Plans. Managing Drinking-Water Quality from Catchment to Consumer. Geneva.
- De Chernatony, L. 2002: Blagovna znamka: Od vizije do vrednotenja. Strateško oblikovanje in vzdrževanje blagovnih znamk. Ljubljana.
- Deu, Ž. 2004: Obnova stanovanjskih stavb na slovenskem podeželju. Ljubljana.

- Di Bernardo, A. 2008: Aldo Di Bernardo, Pro Loco Venzone, Venzone. Ustni vir, 15. 10. 2008. Zvočni zapis pri avtorju.
- Diamond, J. 2007: Propad civilizacij: Kako družbe izberejo pot do uspeha ali propada. Tržič.
- Dietz, T., Stern, P. C. (eds.) 2008: Public participation in environmental assessment and decision making: Panel on public participation. National Research Council. Washington, D.C.
- Directive 2008/98/EC of the EUROPEAN PARLIAMENT and of the COUNCIL of 19 November 2008 on waste and repealing certain Directives. Inetenet: <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008L0098:EN:NOT> (8. 1. 2014).
- Du Cros, H. 2001: A New Model to Assist in Planning for Sustainable Cultural Heritage Tourism. International journal of tourism research 3. Chichester. DOI: 10.1002/jtr.297.
- Dvornik Perhavec, D. 2010: Conservation of cultural heritage – disorders, deficiencies and building project. 3th International Conference GNP 2010: Civil Engineering – Science and Practice. Žabljak.
- Dvornik Perhavec, D. 2012: A survey of the systems and subsystems involved in the reconstruction of historical buildings. 4th International Conference GNP 2012: Civil Engineering – Science and Practice. Žabljak.
- Ehlers, M. 2008: Geoinformatics and digital earth initiatives: a German Perspective. International Journal of Digital Earth 1-1. Internet: <http://www.tandfonline.com/doi/pdf/10.1080/17538940701781975> (7. 1. 2014).
- Elliott, J., Heesterbeek, S., Lukensmeyer, C. J., Slocum, N. 2005: Participatory Methods Toolkit. A practitioner's manual. Internet: http://archive.unu.edu/hq/library/Collection/PDF_files/CRIS/PMT.pdf (3. 4. 2014).
- Environmental Planning for Small Communities. A Guide for local Decision Makers. United States Environmental Protection Agency. Washington, D.C., 1994.
- Eppich, R., Espada, J. C., Cruz, C., Kulmer, A. 2013: Good practice for the conservation of urban settlements, vernacular architecture and surrounding landscapes. Vernacular Heritage and Earthen Architecture. Boca Raton.
- European landscape convention. Council of Europe. Florence, 2000.
- Evaluation Design and Management. Evaluating Socio-economic Programmes: Volume 1. Luxembourg, 1999.
- Ferčič, A. 2005: Javno-zasebno partnerstvo. Delitev tveganj med partnerjema. Pravna praksa 39. Ljubljana.
- Fridl, J., Repolusk, P. 2011: Prebivalstvene značilnosti Idrije. Na prelomnici: razvojna vprašanja občine Idrija. Ljubljana.
- Fullerton, L., McGettigan, K., Stephens, S. 2010: Integrating management and marketing strategies at heritage sites. International Journal of Culture, Tourism and Hospitality 40-2. Bradford. DOI:10.1108/17506181011045181.
- Fumagalli, N., Toccolini, A. 2012: Relationship between greenways and ecological network: A case study in Italy. International Journal of Environmental Research 6-4. Tehran.
- Garofoli, G., Musyck, B. 2001: Innovation policies for SMEs in Europe: Towards an interactive model? Regional studies 35-9. Cambridge.
- Geipel, R. 1982: Disaster and Reconstruction. London.
- Geißendörfer, M., Rahn, T., Stoiber, M. 2003: Handbuch »Erfolgreiches Regionalmanagement«. Forschungsgruppe Agrar- und Regionalentwicklung Triesdorf und Forschungsgesellschaft für Raumanalysen, Regionalpolitik und Verwaltungspraxis GmbH. Triesdorf, Bayreuth.
- Geoghegan, T., Renard, Y., Brown, N. A. 2004: Guidelines for Participatory Planning: A Manual for Caribbean Natural Resource Managers and Planners. Caribbean Natural Resources Institute. Port of Spain.
- Geografski terminološki slovar. Kladnik, D., Lovrenčak, F. Orožen Adamič, M. (eds.). Ljubljana, 2005.
- Goluža, M., Erhartič, B. 2014: Smernik Unesca za ohranjanje kulturne dediščine. Upravljanje območij s kulturno dediščino. Ljubljana.
- Goluža, M., Geršič, M. 2014: Trženje kulturne dediščine. Upravljanje območij s kulturno dediščino. Ljubljana.
- Good Practice Examples in Europe for Soft Mobility in Tourism. Austrian Ministry of Transport, Innovation and Technology. 2011. Internet: http://umwelt.naturfreunde.at/files/uploads/2011/07/Good_Practice_Soft_Mobility_in_Europe.pdf (18. 2. 2014).

- Goodwin, H. 2011: *Responsible Tourism Management Theory and Practice*. Leeds.
- Goodwin, H., Francis, J. 2003: Ethical and responsible tourism: consumer trends in the UK. *Journal of vacation marketing* 9-3. Thousand Oaks.
- Grmadnik, J. 2012: S socialnim podjetništvom iz gospodarske krize. Delo (30.3.2012). Internet: <http://www.delo.si/gospodarstvo/podjetja/s-socialnim-podjetnistvom-iz-gospodarske-krize.html> (13. 11. 2012).
- Guérin, R. (ed.) 2010: *CAPACities – Competitiveness Actions and Policies for Alpine Cities: Pilot Actions*. Avignon.
- Guidelines for Drinking-Water Quality, Third Edition, Volume 1, Recommendations. 2004. WHO. Internet: http://www.who.int/water_sanitation_health/dwq/GDWQ2004web.pdf (10. 2. 2014).
- Hadingham, E. 2008: Did a tsunami wipe out a cradle of western civilization? *Discover Magazine* (4. 1. 2008). Internet: <http://discovermagazine.com/2008/jan/did-a-tsunami-wipe-out-a-cradle-of-western-civilization#UfGGIW1oXQs> (25. 7. 2013).
- Hage, M., Leroy, P., Petersen, A. C. 2010: Stakeholder participation in environmental knowledge production. *Futures* 42. London.
- Hanazato, T. 2011: Tohoku Pacific Earthquake on 11 March 2011: Reports by ICOMOS Japan. Internet: http://www.icomos.org/risk/2011/ICOMOS_Japan_%20201103_earthquake_reports_20110331.pdf (18. 9. 2013).
- Haubl, R. 1998: *Mit Sinn und Verstand: Einführung in die Umweltästhetik. Sozialwissenschaftliche Ökologie. Eine Einführung*. Berlin, Heidelberg, New York.
- Herlitzius, L., Linke, H. J., Lüsse, S., Palomba, L. 2009: Development of cultural landscape in Germany – topical aspects of the region of Starkenburg in South Hessen. *Cultural Landscape – Across Disciplines*. Kraków.
- Horáková, H. 2013: Whose countryside? Contested development in the new rural recreational localities in Czechia from the perspective of the countryside capital. *European Countryside* 5-1. Brno. DOI:10.2478/euco-2013-0002.
- Howard, P., Papayamis, P. (eds.) 2007: *Natural Heritage at the Interface of Nature and Culture*. London, New York.
- Hrastelj, E. 2010: Vloga porabnikov asociacij v zvezi z blagovno znamko v nakupnem procesu. *Diplomska naloga, Ekonomska fakulteta Univerze v Ljubljani*. Ljubljana.
- Hutchings, J., Cassar, M. 2006: *A Soft System Framework for the Conservation Management of Material Cultural Heritage. Systemic Practice and Action Research* 19-2. New York.
- In 2014 Saaremaa Vodka rebuilds in Saaremaa Island Ilaste windmill. Internet: <http://www.saaremaavodka.ee/en/news/65/pageid/152> (7. 5. 2014).
- Indicators for Monitoring and Evaluation: An Indicative Methodology. *The New Programming Period 2000–2006: Methodological Working Papers. Working Paper 3*. Brussels, 1999.
- Integrated Revitalisation of Historic Towns to Promote a Polycentric and Sustainable Development. *Transnational Manual*. 2008. Internet: http://www.alfoldinfo.hu/cadses/Transnational_Manual.pdf (10. 5. 2013).
- International cultural tourism charter. *Managing Tourism at Places of Heritage Significance*. ICOMOS. Mexico, 1999.
- International Workshop on Impact of Climate Change on Cultural Heritage: Resolution. New Delhi, 2007. Internet 1: <http://www.southeast-europe.net/en/> (24. 6. 2013).
- Internet 2: <http://www.zvkds.si/sl/zvkds/varstvo-kulturne-dediscine/o-kulturni-dediscini/ohranjanje-kulturne-dediscine/> (1. 7. 2013).
- Internet 3: <http://www.zvkds.si/sl/zvkds/varstvo-kulturne-dediscine/o-kulturni-dediscini/pomeni-varstva-kulturne-dediscine/> (1. 7. 2013).
- Internet 4: <http://whc.unesco.org/en/statesparties/> (30. 5. 2013).
- Internet 5: <http://whc.unesco.org/en/list> (17. 5. 2013).

- Internet 6: <http://www.irc.nl> (10. 2. 2014).
- Internet 7: http://www.mizks.gov.si/si/storitve/kultura/razvidi_evidence_in_registri/register_zive_kulturne_dediscine/ (13. 3. 2013).
- Internet 8: http://www.ljubljanskobarje.si/uploads/datoteke/strokovne_izhodisca_kulturna_dediscina.pdf (25. 3. 2013).
- Internet 9: <http://www.zvkds.si/sl/zvkds/varstvo-kulturne-dediscine/o-kulturni-dediscini/ohranjanje-kulturne-dediscine/> (1. 7. 2013).
- Internet 10: <http://www.zvkds.si/sl/zvkds/nasveti-za-lastnike/kulturna-dediscina/> (1. 7. 2013).
- Internet 11: <http://www.cartadelrischio.it> (8. 1. 2013).
- Internet 12: <http://www.graz.at> (18. 2. 2014).
- Internet 13: http://www.elits.org/index.php?id=13&study_id=3089 (18. 2. 2014).
- Internet 14: <http://greennewdeal.eu/?id=255> (18. 2. 2014).
- Internet 15: <http://www.slimweg.be> (18. 2. 2014).
- Internet 16: <http://www.eko-tce.eu/projekti/socialno-podjetnitvo/32-drubeno-koristna-podjetja.html> (13. 11. 2012).
- Internet 17: <http://www.center-rcv.org/index.php?id=51> (13. 11. 2012).
- Internet 18: http://www.google.si/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCsQFjAA&url=http%3A%2F%2Fwww.center-rcv.org%2Fupload%2Ffiles%2FPriporocila_za_uvajanje_Sp.doc&ei=YOFKUZThCIWQtAbq4IGICQ&usq=AFQjCNGxtwy4v4uqg3eiek3C5bT314iimg&bvm=bv.44158598,d.Yms (28. 2. 2013).
- Internet 19: <https://www.ashoka.org/fellow/jose-maria-perez-gonzalez-perez> (20. 3. 2013).
- Internet 20: http://www.sindikar-git.si/index.php?option=com_content&view=article&id=125:socialni_turizem (20. 3. 2013).
- Internet 21: <http://premiki.com/> (1. 4. 2013).
- Internet 22: <http://www.socialinnovationeurope.eu/directory/news/greece-bottom-innovation-social-capital> (20. 3. 2013).
- Internet 23: <http://www.schwabfound.org/sf/SocialEntrepreneurs/Profiles/index.htm?name=173874&organization=0&sarea=0&ssector=0&stype=0> (20. 3. 2013).
- Internet 24: <http://sl.wikipedia.org/wiki/Tr%C5%Beenje> (25. 5. 2013).
- Internet 25: <http://www.toinitiative.org/fileadmin/docs/ActivityReports/ActivityReport2011.pdf> (10. 5. 2013).
- Internet 26: http://sethgodin.typepad.com/seths_blog/2009/12/define-brand.html (4. 5. 2014).
- Internet 27: <http://www.opengeospatial.org/standards/is> (20. 5. 2014).
- Internet 28: <http://geoserver.org> (20. 5. 2014).
- Internet 29: <http://www.gnu.org/copyleft/gpl.html> (20. 5. 2014).
- Internet 30: <http://www.pcn.minambiente.it/GN> (23. 5. 2014).
- Janssen, J., Knippenberg, L. 2012: From landscape preservation to landscape governance: European experiences with sustainable development of protected landscapes. *Studies on Environmental and Applied Geomorphology*. Rijeka.
- Janšek, I. 2010: Naravna in kulturna dediščina v turistični ponudbi občine Ravne na Koroškem. *Diplomska naloga, Ekonomsko-poslovna fakulteta Univerze v Mariboru*. Maribor.
- Kasperaviciene, A. 2001: Revitalisation of Vilnius Old Town. Social and economic integration. Internet: http://www.arcchip.cz/w01/w01_kasperaviciene.pdf (10. 5. 2013).
- Kladnik, D. 2011: Temeljne družbenogeografske poteze občine Idrija. Na prelomnici: razvojna vprašanja občine Idrija. Ljubljana.
- Kladnik, D., Perko, D., Urbanc, M. 2009: Cultural landscapes in Slovenia from a geographical perspective. *Cultural Landscape – Across Disciplines*. Kraków.
- Kotler, P. 2004: *Management trženja*. Ljubljana.
- Kovač, J. 2006: Case studies in applying the IWA WLTF approach in the West Balkan region: Results obtained. *Skopje conference on Water loss management, telemetry and SCADA systems in water distribution systems*. Skopje.

- Koželj, J. 1998: Degradirana urbana območja. Ljubljana.
- Koželj, Z. 2010: Politika varstva kulturne dediščine v Sloveniji. Internet: http://www.zvkds.si/media/pages/documents/Herein2_slo_2010_Kozelj.pdf (12. 3. 2013).
- Kuštor, J. 2008: Ustvarjanje nove korporativne blagovne znamke na primeru skupine Panvita. Diplomaska naloga, Ekonomska fakulteta Univerze v Ljubljani. Ljubljana.
- Lane, B., Kastenholz, E., Lima, J., Majewski, J. 2013: Industrial heritage and agri/rural tourism in Europe: Study. Policy department B: structural and cohesion policies, European Parliament. Brussels.
- Larsen, T. A., Gujer W. 1997: The concept of sustainable urban water management, *Water Science and Technology* 35-39. Oxford, New York.
- Lebe, S. S. 2008: Kulturna dediščina in lokalne tradicije kot temelj turistične ponudbe podeželja. Maribor.
- Lebersorger, S., Weissenbacher, N., Mayr, E., Aschauer, C. 2010: Waste management in mountain refuges – an integrated evaluation. *Waste Management & Research* 29-5. London.
- Ledinek Lozej, Š., Šmid Hribar, M., Bole, D. 2012: SY_CULTour Check-list for evaluation of cultural values with regard to their developmental potential, unpublished material.
- Leopold, L. B., Clarke, F. E., Hanshaw, B. B., Balsley, J. R. 1971: A Procedure for Evaluating Environmental Impact. *Geological Survey Circular* 645. Washington, D.C.
- Leslie, D. 2012: The responsible tourism debate. *Responsible tourism: concepts, theory and practice*. Wallingford.
- Lichner, M., Breznoscak, M. 2008: Urban renewal through the reconversion of the historic centre into a district of institutions and a tourist destination. *Balanced urban revitalization for social cohesion and heritage conservation*. Paris.
- Lienert, J., Larsen, T. A. 2010: High acceptance of urine source separation in seven European countries: a review. *Environmental Science and Technology* 44. Washington, D.C.
- Lipský, Z., Romportl, D. 2007: Classification and typology of cultural landscapes: methods and applications. The role of landscape studies for sustainable development. Internet: <http://www.yumpu.com/en/document/view/2856872/classification-and-typology-of-cultural-landscapes-geobio> (13. 3. 2013).
- Lončarič, R. 1995: Organizacija izvedbe graditeljskih projekata. Zagreb.
- Longley, P. A., Goodchild, M. F., Maguire, D. J., Rhind, D. W. 2005: *Geographic Information Systems and Science*. London.
- Lurcott, R. H. 2005: Regional visioning public participation: best practices. Internet: http://www.sustainablepittsburgh.org/pdf/Regional_Visioning_Jan_05.pdf (4. 12. 2007).
- MacDonald, S. 2011: Leveraging heritage: Public-private, and third-sector partnerships for the conservation of the historic urban environment. ICOMOS. Internet: <http://openarchive.icomos.org/1303> (26. 3. 2013).
- Makarovič, M. 1994: Kultura na vasi in njena vloga v razvoju podeželja. *Glasnik Slovenskega etnološkega društva* 34-4. Ljubljana.
- Managing Cultural World Heritage. *World heritage resource manual*. UNESCO. Paris, 2013. Internet: <http://whc.unesco.org/document/125839> (1. 4. 2014).
- Managing Disaster Risks. Paris, 2010. Internet: <http://whc.unesco.org/uploads/activities/documents/activity-630-1.pdf> (25. 7. 2013).
- Managing natural world heritage. *World heritage resource manual*. UNESCO. Paris, 2012. Internet: <http://whc.unesco.org/document/117412> (1. 4. 2014).
- Marcetta, F. 2007: Strategic Spatial Planning and Sustainable Environment. Internet: http://www.regionhranicko.cz/dokumenty/projekty/19/vystupy/Manual_StraSSE.pdf (3. 4. 2014).
- Massue, J. P., Schvoerer, M. 2001: Protection of Cultural Heritage: Handbook of school of civil protection, Module bl-4/c. Strasbourg.
- McCool, S. F. 1996: Limits of Acceptable Change: A Framework for Managing National protected Areas: Experiences from the United States. Workshop on Impact Management in Marine Parks, August 13–14, 1996, Kuala Lumpur.

- Medeossi, P. 2009: Venzone, sabato 19 si inaugura l'interessante museo laboratorio »Tiere Motus«. *Messaggero Veneto*, 14. 9. 2009. Internet: http://www.infondazione.it/stampa/articoli/8429895/mostra_articolo (10. 7. 2013).
- Meier, H.-R., Petzet, M., Will, T. (eds.) 2008: *Heritage at Risk: Cultural Heritage and Natural Disasters Risk Preparedness and the Limits of Prevention*. Dresden.
- Meisterheim, T., Cretney, S., Cretney, A. 2011: *Participatory Process Design Guide for Strategic Sustainable Development*. Internet: <http://womensplace.osu.edu/assets/files/TheWeave-July2011.pdf> (3. 4. 2014).
- Mesojedec, T., Šporar P., Strojjan K., Valentinčič, T., Bačar, F., Sakovič, G., Strojjan, T. 2012: *Socialno podjetništvo*. Ljubljana.
- Methods, H., Walski, T. M., Chase, D. V., Savic, D. A., Grayman, W., Beckwith, S., Koelle, E. 2003: *Advanced Water Distribution Modeling and Management*. Waterbury.
- Metropolitan association with organisational core in the Gothenburg region. 2014. Internet: http://www.catch-mr.eu/public/DB_Data/files/Downloads/CMR_Metropolitan_association_with_organisational_core_in_Gothenburg_region.pdf (2. 4. 2014).
- Meyer, J. A. 1999: *Regionalmarketing: Grundlagen, Konzepte, Anwendung*. München.
- Meyer, D., Molle, P., Esser, D., Troesch, S., Masi, F., Dittmer, U. 2013: *Constructed Wetlands for Combined Sewer Overflow Treatment – Comparison of German, French and Italian Approaches*. Water 5-1. Basel.
- Migoň, P. 2013: *Cultural heritage and natural hazards*. Encyclopedia of Natural Hazards. Dordrecht.
- Mihalič, T. 2006: *Trajnostni turizem*. Ljubljana.
- Mihelič, B. 2007: *Prenova mesta: metodološka orodja za določanje in vrednotenje prednostnih območij in tipov prenove*. Ljubljana.
- Misiura, S. 2006: *Heritage marketing*. Oxford.
- Mitchell, N., Buggey, S. 2000: *Protected landscapes and cultural landscapes: Taking advantage of diverse approaches*. The George Wright Forum 17-1. Hancock.
- Mulej, M., Potočan, V. 2006: *Complexity Theory Belongs to More system Theory Streams*. Organizacija 39-1. Maribor.
- Müllegger, E., Weissenbacher, N., Regelsberger, M., Regelsberger, B., Platzer, C., Mitterer Reichmann, G., Pötsch, T. 2009: *Nachhaltiger Siedlungswasserwirtschaft – Praktische Anwendungen (Sustainable water and sanitary management – practical applications)*. Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management. Final Project Report of NASPA Project. Vienna.
- Multi-functional Historic Urban Areas. 2010. Internet: http://urbact.eu/fileadmin/Projects/HERO/projects_media/Multi-functional_historic_urban_areas_-_thematic_report_201101.pdf (14. 6. 2012).
- Nared, J. 2007: *Prostorski vplivi slovenske regionalne politike*. Ljubljana.
- Nared, J., Bole, D. 2014: *Culture, cultural values and cultural heritage as drivers of regional development*. Regions 293. Seaford.
- Nared, J., Erhartič, B., Razpotnik Viskovič, N. 2013: *Including development topics in a cultural heritage management plan: Mercury heritage in Idrija*. Acta geographica Slovenica 53-2. Ljubljana. DOI: 10.3986/AGS53404.
- Nared, J., Perko, D. (eds.) 2010: *Na prelomnici: razvojna vprašanja občine Idrija. Capacities 1*. Ljubljana.
- Nared, J., Ravbar, M. 2003: *Starting points for the monitoring and Evaluation of regional policy in Slovenia*. Acta geographica Slovenica 43-1. Ljubljana. DOI: 10.3986/AGS43102.
- Nared, J., Razpotnik Viskovič, N. (eds.) 2012: *Moving people: Towards sustainable mobility in European metropolitan regions*. Potsdam.
- Nared, J., Smrekar, A., Bole, D., Kozina, J., Fridl, J., Polajnar Horvat, K., Gabrovec, M., Repolusk, P., Zavodnik Lamovšek, A., Sever, B. 2011: *Inovativna strategija trajnostnega razvoja Občine Idrija*. Research report, Geografski inštitut Antona Melika ZRC SAZU, Ljubljana.
- Neale, L. 2012: *Managing Heritage Cities in Europe: the Role of Public-Private Partnerships*. City networking flagship event of the EU-China Urbanisation Partnership. Internet: <http://ec.europa.eu/culture/eu-china/attachments/documents/laurie-neale-presentation.pdf> (25. 3. 2013).

- Nedog, A. 2013: Sistemske rešitve za obnovo zgodovinskih objektov. Internet: <http://www.mapei.com/public/SI/documents/900/attach/sistemske%20reitve%20za%20obnovo%20zgodovinskih%20objektov.pdf> (13. 3. 2013).
- Nicolics, S., Richard, L., Jung, H., Perfler, R. 2012: Environmental Planning and Supporting GIS Platform. Part 1 – Environmental Planning Concept. Vienna.
- Nidumolu, U. B, de Biea, C., van Keulen, H., Skidmorec, A. K, Harmsen, K. 2006: Review of a land use planning programme through the soft systems methodology. Land Use Policy 23. New York.
- Nypan, T.M. 2008: The economics of built heritage. Cultural heritage and tourism. Department of Cultural Heritage under Ministry of Culture. Vilnius.
- Ofner, H. 2011: Abfallaufkommen und Abfallsammlung in historischen Städten mit Tourismus. Diplomarbeit an der Universität für Bodenkultur Wien, Institut für Abfallwirtschaft. Wien.
- Operational Guidelines for the Implementation of the World Heritage Convention. 2013. Internet: <http://whc.unesco.org/en/guidelines/> (24. 4. 2013).
- OPENESS Project. 2014. Internet: <http://www.openness-project.eu/node/41> (13. 5. 2014).
- Orožen Adamič, M. 1980: Neposredni učinki potresa v pokrajini. Potresni zbornik. Tolmin.
- Our team helped to bring into order the surroundings of Ennu windmill in Saaremaa Island. 2014. Internet: <http://www.saaremaavodka.ee/en/news/59/pageid/155> (7. 5. 2014).
- Oven, M. 2007: Prevod listine iz Burre. Internet: http://www.arhiv.mk.gov.si/fileadmin/mk.gov.si/page/uploads/Ministrstvo/raziskave-analize/dediscina/metodologija-konservatorski_nactr/02_Burra.pdf (26. 3. 2013).
- Ovsenik, R. 2003: Perspektive in protislovja razvoja turističnega področja – model turističnega managementa na območju slovenskih Alp. Doktorsko delo, Fakulteta za organizacijske vede Univerze v Mariboru. Kranj.
- Pacione, M. 2014: The power of public participation in local planning in Scotland: the case of conflict over residential development in the metropolitan green belt. GeoJournal 79. Dordrecht.
- Palang, H., Fry, G. 2003: Landscape Interfaces. Cultural Heritage in Changing Landscape. Dordrecht.
- Parcanschi, B. 2010: Brand. Computing fundamentals glossary. Internet: <http://whatis.techtarget.com/definition/brand> (4. 5. 2014).
- Participative approach in Gothenburg region. 2014. Internet: http://www.catch-mr.eu/public/DB_Data/files/Downloads/CMR_Participative_approach_in_Gothenburg_region.pdf (2. 4. 2014).
- Participatory Processes. 2011. Internet: <http://weadapt.org/knowledge-base/transforming-governance/participatory-processes> (3. 4. 2014).
- Pedersen, A. 2002: Managing Tourism at World Heritage Sites: a Practical Manual for World Heritage Site Managers. Internet: <http://whc.unesco.org/uploads/activities/documents/activity-113-2.pdf> (10. 2. 2014).
- Pescod, M. B. 1992: Wastewater treatment and use in agriculture – Food and Agriculture Organisation (FAO) of the United Nations Irrigation and drainage paper 47. Rome.
- Petrescu, F. 2007: The use of GIS technology in cultural heritage. CIPA 2007 XXIIth International Symposium. Athens.
- Picard, R. (ed.) 2008a: Analysis and reform of cultural heritage policies in South-East Europe. Strasbourg.
- Picard, R. (ed.) 2008b: Sustainable development strategies in Europe. Strasbourg.
- Picard, R. 2008c: Institutional reform – a new role for private owners and enterprises and their professional advisers. Analysis and reform of cultural heritage policies in South-East Europe. Strasbourg.
- Picard, R. 2008d: Institutional reform and partnership with the privat sector. Analysis and reform of cultural heritage policies in South-East Europe. Strasbourg.
- Picard, R. 2008e: The Grainger Town project: sustaining the historic city centre of Newcastle upon Tyne, England. Sustainable development strategies in Europe. Strasbourg.
- Pierson, L. A., Davis, S. A., Van Vickle, R. 1990: Rockfall Hazard Rating System Implementation Manual. Federal Highway Administration (FHWA) Report FHWA-OR – EG-90-01. FHWA, U.S. Department of Transportation. Washington, D.C.

- Pipan, P. 2011: Primerjava popotresne obnove v Italiji in Sloveniji po potresih v Zgornjem Posočju in Furlaniji. Doktorska disertacija. Fakulteta za humanistične študije Univerze na Primorskem. Koper.
- Pirkovič, J. 2012: Arheološko konservatorstvo in varstvo nepremične kulturne dediščine. Internet: <http://arheologija.ff.uni-lj.si/studij/gradivo/konservatorstvo/ArheologijaZaJavnost.pdf> (15. 3. 2013).
- Planina, J., Mihalič, T. 2002: Ekonomika turizma. Ljubljana.
- Platon 2004: Zbrana dela, I. Celje.
- Poult, J. 2007: Connecting People While Preserving the Planet: Essays on Sustainable Development. Redlands.
- Preparing world heritage nominations, Second edition. World heritage resource Manual. UNESCO. 2011. Internet: <http://whc.unesco.org/document/116069> (1. 4. 2014).
- Preserving Estonia's windmill heritage. Altia Magazine 2. Internet: http://www.altiacorporation.fi/connect/030faba9-7509-4f53-9b3b-de34f59943ef/Altia_Vintage_2013_web.pdf?MOD=AJPERES (7. 5. 2014).
- Primožič, T. 2010: Trženje dediščine v turizmu na primeru klekljarske zbirke Loškega muzeja Škofja Loka. Glasnik slovenskega etnološkega društva 50/3–4. Ljubljana.
- Programme priorities. Internet: http://www.southeast-europe.net/en/about_see/programme_priorities/ (1. 3. 2014).
- Protecting the Cultural Heritage from Natural Disasters. Brussels, 2007. Internet: [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/369029/IPOL-CULT_ET\(2007\)369029_XL.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/369029/IPOL-CULT_ET(2007)369029_XL.pdf) (25. 7. 2013).
- Pucelj, E. U. 2013: Fenomen blagovnih znamk. Internet: <http://www.e-neo.si/si/atrativno/fenomen-blagovnih-znamk/> (28. 3. 2013).
- Puharič, K. 2001: Gospodarsko pravo z osnovami prava. Ljubljana.
- Punkkinen, H., Merta, E., Teerioja, N., Moliis, K., Kuvaja, E. 2012: Environmental sustainability comparison of a hypothetical pneumatic waste collection system and a door-to-door system. Waste Management 32-10. New York.
- Radoslav, R., Branea, A. M., Gaman, M. S. 2013: Rehabilitation through a holistic revitalization strategy of historical city centres – Timisoara, Romania. Journal of Cultural Heritage 14-3. Paris.
- Rauch, T., Bartels, M., Engel, A. 2001: Regional rural development: A regional response to rural poverty. Wiesbaden. Internet: <http://www2.gtz.de/dokumente/bib/02-5046.pdf> (6. 12. 2007).
- Raugaliene, J. 2008: The Revitalization of Vilnius Old Town, 1995–2005. Global Urban Development Magazine 4-1. Internet: <http://www.globalurban.org/GUDMag08Vol4Iss1/Raugaliene.htm>
- Razpotnik Visković, N., Nared, J., Urbanc, M. 2008: Pogovor v kavarni: soočenje teorije in prakse. Geografski vestnik 80-1. Ljubljana.
- Razpotnik Visković, N., Urbanc, M., Nared, J. 2009: Prostorska in razvojna vprašanja Alp. Georitem 12. Ljubljana.
- Recommendation Concerning the Protection, at National Level, of the Cultural and Natural Heritage. UNESCO. Paris, 1972.
- Recommendation No. R (93) 9 of the Committee of Ministers to Member States on the Protection of the Architectural Heritage against Natural Disasters. 1993. Internet: <https://wcd.coe.int/ViewDoc.jsp?id=622765> (18. 9. 2013).
- Recommendation on the Historic Urban Landscape, including a glossary of definitions. UNESCO. Paris, 2011.
- Reed, M. S. 2008: Stakeholder participation for environmental management: A literature review. Biological Conservation 141. Barking.
- Responsible Tourism and Territorial Development. 2013. Internet: http://www.diplomatie.gouv.fr/en/IMG/pdf/Responsible_tourism.pdf (10. 5. 2013).
- Richards, G. 2005: Cultural tourism in context. Cultural tourism in Europe. Wallingford.
- Ricketts, A. 2008: Participation in place-making: Enhancing the wellbeing of marginalised communities in Aotearoa/New Zealand. Internet: <http://www.chranz.co.nz/pdfs/a-ricketts-participation-in-place-making.pdf> (1. 3. 2014).

- Rigol, I. 2006: Management of Cultural landscape: Module 4. Havana. Internet: <http://whc.unesco.org/uploads/activities/documents/activity-475-8.pdf> (3. 4. 2013).
- Ringbeck, B. 2008: Management Plans for World Heritage Sites. A Practical Guide. Bonn.
- Robinson, M. 2008: The experiences of cultural tourism. Cultural heritage and tourism. Department of Cultural Heritage under Ministry of Culture. Vilnius.
- Rosenfeld, A. R. 2008: Cultural and Heritage Tourism. Michigan.
- Ruoss, E., Alfarè, L. 2013: Sustainable Tourism as Driving Force for Cultural Heritage Sites Development. National Research Council of Italy. Rome.
- Rypkema, D. D. 2005: Kulturna dediščina v Evropi nekaj velja. Internet: <http://www.icomos.si/documents/doc/dediscina.doc> (12. 3. 2013).
- Rypkema, D. D. 2008: Heritage Conservation and the Local Economy. Global Urban Development 4-1. Internet: <http://www.globalurban.org/GUDMag08Vol4Iss1/Rypkema.htm> (10. 5. 2013).
- Sandstorms Eating Away at China's Great Wall. The Associated Press (29. 8. 2007). Internet: <http://www.nbcnews.com/id/20492488/#.UsViT9GA2Ag> (1. 2. 2014).
- Sarbib, J. L. 2000: Minutes of the MENA Regional Management Team Meeting. World Bank. Washington, D. C.
- Sassa, K., Fukuoka, H., Wang, G., Wang, F., Benavente, E., Ugarte, D., Astete, F. V. 2005: Landslide investigation in Machu Picchu world heritage, Cusco, Peru. Landslides: Risk Analysis and Sustainable Disaster Management. Berlin.
- Sayce, K., Shuman, K., Connor, D., Reisewitz, A., Pope, E., Miller-Henson, M., Poncelet, E., Monié, D., Owens, B. 2013: Beyond traditional stakeholder engagement: Public participation roles in California's statewide marine protected area planning process. Ocean & Coastal Management 74. New York.
- Scheyvens, R. 1999: Ecotourism and the empowerment of local communities. Tourism management 20. Amsterdam.
- Schobben, R. 2000: »New Governance« in the European Union: A Cross-Disciplinary Comparison. Regional & Federal Studies 10-2. London.
- Seeger, H. 1999: The history of German waste water treatment, European Water Management 2-5. Internet: <http://www.sewerhistory.org/articles/whregion/germany/Seeger.pdf> (28. 10. 2012).
- Selection and Use of Indicators for Monitoring and Evaluation. Evaluating Socio-economic Programmes: Volume 2. Luxembourg, 1999.
- Selman, P. 2000: Environmental planning: the conservation and development of bio-physical resources. London.
- Selman, P. 2004: Barriers and bridges to sustaining cultural landscapes. The New Dimensions of the European Landscape. Dordrecht.
- Shannon Peckham, R. 2003: Rethinking heritage. London.
- Sibila Lebe, S. 2008: Kulturna dediščina in lokalne tradicije kot temelj turistične ponudbe podeželja. Maribor.
- Siegesmund, S., Weiss, T., Vollbrecht, A. 2002: Natural Stone, Weathering Phenomena, Conversations Strategies and Case Studies: introduction. Bath.
- Silberberg, T. 1994: Cultural tourism and business opportunities for museums and heritage sites. Presentation of paper to Conference of School of Business, University of Victoria, Quality Management in Urban Tourism: Balancing Business and Environment. Toronto.
- Site Strategic Assessment Report. Volume I. 2012. Internet: http://www.cherplan.eu/sites/default/files/public_files/D33-Strategic_Assessment-Volume_I.pdf (13. 5. 2014).
- Smith, R. S. 2002: Sanitation: controlling problems at source. Internet: http://www.who.int/water_sanitation_health/sanitproblems/en/index.html (28. 10. 2012).
- South East Europe (SEE) Programme Manual. Version 2.1 May 2010. 2nd Call for project proposals. Internet: <http://www.southeast-europe.net/download.cmt?id=1507> (1. 3. 2014).
- Spolšne smernice za načrtovanje občinskega prostorskega načrta za področje varstva nepremične kulturne dediščine. 2013. Internet: http://www.mizks.gov.si/fileadmin/mizks.gov.si/pageuploads/Kulturna_dediscina/NEPREMICNA/ProstorKD/splosne_smernice_KD_za_OPN_2013-01-28.pdf (13. 3. 2013).

- Stakeholder analysis and engagement. 2011. Internet: <http://weadapt.org/knowledge-base/transforming-governance/stakeholder-analysis-and-engagement> (3. 4. 2014).
- Stankey, G. H., Cole, D. N., Lucas, R. C., Petersen, M. E., Frissell, S. S. 1985: The Limits of Acceptable Change (LAC) system for wilderness planning. Gen. Tech. Report INT-176, USDA Forest Service Intermountain Forest and Range Experiment Station. Ogden.
- Stankey, G. H., McCool, S. F., Stokes, G. L. 1984: Limits of acceptable change: A new framework for managing the Bob Marshall Wilderness Complex. *Western Wildlands* 10-3. Missoula.
- Stebbins, R. A. 1996: Cultural tourism as serious leisure. *Annals of tourism research*. Amsterdam.
- Stovel, H. 1998: Risk Preparedness: A Management Manual for World Cultural Heritage. Rome.
- Strategies for Reform: A Manual for Water Utilities in South Eastern Europe. The Priority Environmental Investment Programme for South Eastern Europe. 2009. Internet: <http://web.rec.org/documents/PEIPWaterManuaFinal.pdf> (10. 2. 2014).
- Sustainable Tourism and Cultural Heritage. A Review of Development Assistance and its Potential to Promote Sustainability. 1999. Internet: http://www.nwhf.no/files/File/culture_fulltext.pdf (31. 3. 2014).
- Svenson, B., Östhol, A. 2001: From Government to Governance: Regional Partnership in Sweden. *Regional & Federal Studies* 11-2. London.
- Šmid Hribar, M. 2014: Tipologija dediščine. Upravljanje območij s kulturno dediščino. Ljubljana.
- Šmid Hribar, M., Lapuh, L. 2014: Razvojni potenciali kulturne dediščine. Upravljanje območij s kulturno dediščino. Ljubljana.
- Šmid Hribar, M., Ledinek Lozej, Š. 2013: Vloga prepoznavanja in upravljanja kulturnih vrednot pri razvoju podeželja. *Acta Geografica Slovenica* 53-1. Ljubljana. DOI: 10.3986/AGS53402.
- Šmid Hribar, M., Ledinek Lozej, Š., Nared, J., Trenkova, L. 2012: Joint Survey of Cultural Values. Internet: <http://www.sycultour.eu/documents/joint-survey-of-cultural-values-1> (15. 11. 2012).
- Štulc, J. 2008: The 2002 Floods in the Czech Republic and their impact on built heritage. *Heritage at Risk: Cultural Heritage and Natural Disasters Risk Preparedness and the Limits of Prevention*. Dresden.
- Taboroff, J. 2003: Natural disasters and urban cultural heritage: A reassessment. *Safer Cities: The Future of Disaster Risk*. Disaster Risk Management Series 3. Washington, D. C.
- Taylor, K. 2012: Landscape and meaning: Context for a global discourse on cultural landscapes values. *Managing Cultural Landscapes*. Abingdon.
- The Athens Charter for the Restoration of Historic Monuments. 1931. Internet: <http://www.icomos.org/en/charters-and-texts/179-articles-en-francais/ressources/charters-and-standards/167-the-athens-charter-for-the-restoration-of-historic-monuments> (27. 3. 2014).
- The Charter for the conservation of historic towns and urban areas (Washington charter). ICOMOS. Washington, D. C., 1987.
- The Charter on the Principles for the Analysis, Conservation, and Structural Restoration of Architectural Heritage. ICOMOS. Victoria Falls, 2003.
- The Convention for the Safeguarding of Intangible Cultural Heritage. UNESCO. Paris, 2003.
- The Declaration of Amsterdam. The European Charter on Architectural Heritage. 1975. Internet: <http://www.icomos.org/en/charters-and-texts/179-articles-en-francais/ressources/charters-and-standards/169-the-declaration-of-amsterdam> (28. 3. 2013).
- The Impact of Culture on Tourism. OECD. Paris, 2009.
- The International Charter for the Conservation and Restoration of Monuments and Sites. ICOMOS. Venice, 1964.
- The natural and cultural heritage as development forces. Swedish national heritage board. Stockholm, 2011.
- The power of branding. 2013. Medmrežje: <http://www.designcouncil.org.uk/news-opinion/power-branding> (12. 6. 2014).
- The Radenci Declaration on the Protection of Cultural Heritage in Emergencies and Exceptional Situations. Radenci, 1998. Internet: <http://www.ancbs.org/cms/images/The%201998%20Radenci%20Declaration.pdf> (18. 9. 2013).

- The Rising Tide: an examination of Holocene relative sea-level changes and the impact on the pre-historic human population of Orkney. Internet: http://www.st-andrews.ac.uk/tzp/rising_tides.html (18. 9. 2013).
- The Urbact II Programme. 2010. Internet: http://urbact.eu/fileadmin/general_library/URBACT2010web.pdf (14. 6. 2012).
- To Saaremaa, the windmills are a matter of the heart! Saaremaa Vodka helps to rebuild them. 2014. Internet: <http://www.saaremaavodka.ee/en/news/54/pageid/155> (7. 5. 2014).
- Török, A. 2002: Oolitic limestone in a polluted atmospheric environment in Budapest: weathering phenomena and alterations in physical properties. *Natural Stone, Weathering Phenomena, Conversions Strategies and Case Studies*. Bath.
- Tosi, L., Teatini, P., Carbognin, L., Brancolini, G. 2009: Using High Resolution Data to Reveal Depth-Dependent Mechanisms That Drive Land Subsidence: The Venice Coast, Italy. *Tectonophysics* 474-1/2.
- Tourism in Saaremaa. 2014. Internet: http://www.saaremaa.ee/index.php?option=com_content&view=article&id=498 (7. 5. 2014).
- Tschoegl, N. 1972: *Atlantis: Cradle of western civilization*. Engineering and Science 35-7. Pasadena.
- Uranjek, M. 2008: Problematika injektiranja zidov objektov kulturne dediščine. Magistrsko delo, Fakulteta za gradbeništvo in geodezijo Univerze v Ljubljani. Ljubljana.
- Uranjek, M. 2011: Propadanje in trajnostna obnova ovoja stavbne dediščine. Doktorsko delo, Fakulteta za gradbeništvo in geodezijo Univerze v Ljubljani. Ljubljana.
- Urbact project results. 2011. Internet: http://urbact.eu/fileadmin/general_library/Rapport_Urbact_II.pdf (14. 6. 2012).
- Urbanc, M. 2002: *Kulturne pokrajine v Sloveniji*. Geografija Slovenije 5. Ljubljana.
- Urbanc, M., Nared, J., Bole, D. 2012. *Idrija: A Local Player on the Global Market. Locality, Memory, Reconstruction: The Cultural Challenges and Possibilities of Former Single-Industry Communities*. Newcastle upon Tyne.
- Van Asselt, M. B. A., Mellors, J., Rijkens-Klomp, N., Greeuw, S. C. H., Molendijk, K. G. P., Beers, P. J., van Notten, P. 2001: *Building Blocks for Participation in Integrated Assessment: a review of participatory methods*. International Centre for Integrative Studies (ICIC) Working Paper: I01-E003. Maastricht.
- Vatandoust, A., Mokhtari Taleqani, E., Nejati, M. 2008: Risk management for the recovery project of Bam's cultural heritage. *Heritage at Risk: Cultural Heritage and Natural Disasters Risk Preparedness and the Limits of Prevention*. Dresden.
- Varnes, D. J. 1984: *Landslide Hazard Zonation: A Review of Principles and Practice*. Paris.
- Vázquez-Barquero, A. 2007: *Endogenous development: analytical and policy issues. Development on the ground: clusters, networks and regions in emerging economies*. London.
- Vokić, T. 2009: Rokodelske obrti – priložnosti za regionalni razvoj Pomurja. 20. zborovanje slovenskih geografov, Pomurje – trajnostni regionalni razvoj ob reki Muri. Murska Sobota. Internet: http://www.drustvo-geografov-pomurja.si/projekti/zborovanje/zbornik/z1Tatjana%20Vokic_T.pdf (4. 7. 2013).
- Volpi, M. 2012: BigBelly Solar Keeps Bath Clean. Internet: <http://www.businesswire.com/news/home/20121025005099/en/BigBelly-Solar-Bath-Clean#.U3Haf4GSwS5> (8. 4. 2014).
- Vos, W., Meekes, H. 1999: *Trends in European cultural landscape development: perspectives for a sustainable future. Landscape and Urban Planning* 46. Amsterdam.
- Water Safety Planning for Small Community Water Supplies: Step-by-step risk Management. Guidance for drinking-water supplies in small community. 2012. WHO. Internet: http://whqlibdoc.who.int/publications/2012/9789241548427_eng.pdf (10. 2. 2014).
- Wearing, S., Archer, D., Beeton, S. 2007: *The sustainable marketing of tourism in protected areas. Moving forward*. Internet: http://www.crctourism.com.au/wms/upload/resources/bookshop/Wearing_MrktgTourismParksV2.pdf (13. 5. 2013).

- What is public participation. 2014. Internet: <http://devplan.kzntl.gov.za/asalgp/resources/documents/asalgp/handbooks/1-what-is-public-participation.htm> (2. 4. 2014).
- Will, T., Meier, H. R. 2008: Cultural heritage and natural disasters: risk preparedness and the limits of prevention. *Heritage at Risk: Cultural Heritage and Natural Disasters Risk Preparedness and the Limits of Prevention*. Dresden.
- Wolfram, M., Bührmann, S. 2007: *Trajnostno mestno prometno načrtovanje*. Ljubljana.
- World Heritage, WHC-06/30.COM/7.2. Paris, 26. 6. 2006. Internet: <http://whc.unesco.org/archive/2006/whc06-30com-07.2e.pdf> (18. 9. 2013).
- World Tourism Organization 1981: *Technical handbook on the collection and presentation of domestic and international tourism statistics*. World Tourism Organization: Madrid.
- Wüstner, K., Stengel, M. 1998: *Wissen, Wollen und Handeln: Einführung in die ökologische Psychologie. Sozialwissenschaftliche Ökologie. Eine Einführung*. Berlin, Heidelberg, New York.
- Yung, E., Chan, E. 2012: *Implementation challenges to the adaptive reuse of heritage buildings: Towards the goals of sustainable, low carbon cities*. Habitat International 36. New York.
- Zakon o varstvu kulturne dediščine (ZVKD-1). Uradni listi RS 7/1999, 110/2002, 126/2003, 63/2007, 16/2008. Ljubljana.
- Zorn, M., Komac, B. 2007: *Naravni procesi v svetih knjigah*. Geografski vestnik 79-2. Ljubljana.
- Zorn, M., Komac, B. 2011: *Naravne nesreče v Sloveniji. Idrijski razgledi 56-1*. Idrija.
- Zorn, M., Komac, B. 2013: *Land degradation*. Encyclopedia of Natural Hazards. Dordrecht. Internet: <http://www.springerreference.com/docs/html/chapterbid/347905.html> (3. 4. 2013).
- Zumaglini, M., Nared, J., Alfarè, L., Razpotnik, N., Urbanc, M. 2008: *Participation process in regional development: DIAMONT's perspective*. Arbeitshefte/Quaderni 52. Bolzano/Bozen.

ABOUT THE AUTHORS:

Blaž Komac is a senior research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts. His particular interests include geomorphology and natural hazards. Currently he is editor of the SCI-indexed journal *Acta geographica Slovenica*.
blaz.komac@zrc-sazu.si

Bojan Erhartič was a research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts. His key research interest included regional geography, protection of the environment, nature conservation, geomorphology, geodiversity, and geomorphological heritage.

Daniela Dvornik Perhavec is a PhD student at the Faculty of Civil Engineering at the University of Maribor, Slovenia. Before joining the faculty, she worked thirteen years in spatial and urban planning, especially the planning of buildings, transport infrastructure, international border crossings, and industrial zones. In last few years she has researched cultural heritage and historical structures.
daniela.d-perhavec@um.si

David Bole is a senior research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts. His particular interests include spatial development, urban, economic geography, and mobility. Currently he is leading the transnational cooperation project SY_CULTour.
david.bole@zrc-sazu.si

Drago Kladnik is a research advisor at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts. His key research interests include toponomastics, terminology, regional geography, rural geography, agricultural geography, spatial planning, and applied geography. He is a member of the UNGEGN Working Group on Exonyms.
drago.kladnik@zrc-sazu.si

Giorgia Merti is an external collaborator for the RWG for the CHERPLAN–SEE project. She is an archaeologist and has worked on preparing permanent and temporary exhibitions for the archaeological museums in Patras and Nicopolis (Greece). She holds a master's degree in museum studies from the University of Leicester.
giorgm@hotmail.com

Helmut Jung is a senior research fellow at the Institute of Sanitary Engineering and Water Pollution Control of the University of Natural Resources and Life Sciences, Vienna, and has been an advisor to the Austrian Development Cooperation for many years. Among his areas of work are capacity development, training, and the development of information and decision-making support systems.
helmut.jung@boku.ac.at

Janez Nared is a senior research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia. His key research interests include economic geography and regional development. He also acts as a RSA country representative in Slovenia.
janez.nared@zrc-sazu.si

Joan Iliopoulou-Georgudaki is a former professor and creator of the unit »Environmental Management, Pollution, and Ecotoxicology« at the Biology Department of Patras University, Greece. Her key research interests include environmental management as the key to sustainability for various economic activities, introducing new reliable indicators, environmental pollution, and ecotoxicology. As an expert or directly invited expert, she is and has been a representative for the EU, UN-UNESCO, and European Council.

j.iliopoulou@upatras.gr

Laurent Richard is a research fellow at the Institute of Sanitary Engineering and Water Pollution Control of the University of Natural Resources and Life Sciences, Vienna. His work focuses on planning and operations of water infrastructure.

laurent.richard@boku.ac.at

Loredana Alfarè is a first technologist at the Institute of Marine Sciences of the National Research Council (CNR/ISMAR) in Venice. Since 2000 she has developed and coordinated European projects. Formerly she worked in cooperation projects in African countries dealing with socioeconomic and socio-anthropological surveys. She holds a degree in sociology from La Sapienza University in Rome.

loredana.alfare@gmail.com

Lucija Lapuh is a research assistant at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia. Her key research interests include economic geography, regional planning, political geography, and geography of tourism.

lucija.lapuh@zrc-sazu.si

Maja Topole is a research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts. Her work focuses on regional geography, land use, geocology, agricultural geography, and heritage.

maja.topole@zrc-sazu.si

Maruša Goluža is a research assistant at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia. Her key research interests are rural geography, agricultural geography, cultural heritage, and regional and spatial planning.

marusa.goluz@zrc-sazu.si

Massimiliano Moscatelli works as researcher for the Institute of Environmental Geology and Geoengineering, National Research Council of Italy. His main tasks are geological modeling for geo-hazard assessment and seismic microzonation in urban and archaeological areas, site assessment for hazardous waste disposal, and physical stratigraphy of clastic depositional systems.

massimiliano.moscatelli@igag.cnr.it

Matej Gabrovec is a senior research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts. His particular interests include transport geography (public passenger traffic), regional geography (land use and land cover changes), and physical geography (glaciers). Currently, he is a member of the Triglav National Park Professional Board and Steering Committee of the International Geographical Union Commission on Land Use and Land Cover Changes.

matej@zrc-sazu.si

Mateja Breg Valjavec is a research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia. She has a special interest in geographical information systems and environmental topics (waste management, groundwater protection) as well as rich experience and bibliographic references in the management of protected areas.
mateja.breg@zrc-sazu.si

Mateja Šmid Hribar is a research assistant at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia. Since 2009 she has been the coordinator of the Slovenian Digital Encyclopedia of Heritage (DEDI). Her research interests focus on human-nature interactions and cultural landscape management based on a participatory process.
mateja.smid@zrc-sazu.si

Matija Zorn is a senior research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia. His research mainly focuses on physical geography, and especially on geomorphology and geography of natural hazards; he is also interested in environmental history and geographic information systems.
matija.zorn@zrc-sazu.si

Matjaž Geršič is a research assistant at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia. His particular interests include biogeography, regional geography, and geographical names.
matjaz.gersic@zrc-sazu.si

Nika Razpotnik Visković is a research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, and an assistant at the School of Advanced Social Studies in Nova Gorica, Slovenia. Her fields of interest are rural geography, agricultural geography, and regional and spatial planning.
nika.razpotnik@zrc-sazu.si

Nina Juvan is an expert associate at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, and an assistant at the Faculty of Natural Sciences and Mathematics, University of Maribor, Slovenia. Her fields of interest are phytosociology, vegetation ecology, and microecology.
nina.juvan@zrc-sazu.si

Peter Repolusk is a senior professional research assistant at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts. His particular interests include demography, population geography, ethnic studies, and border regions.
peter.repolusk@zrc-sazu.si

Primož Pipan is a research fellow at the Anton Melik Geographical Institute, Scientific Research Center of the Slovenian Academy of Sciences and Arts, Slovenia. His fields of interest are political geography, regional geography, natural disasters, geographical names, and geography of tourism.
primoz.pipan@zrc-sazu.si

Reinhard Perfler is the scientific coordinator for drinking water supply at the Institute of Sanitary Engineering and Water Pollution Control of the University of Natural Resources and Life Sciences, Vienna. For many years he has been working in capacity building, participation, and strategic infrastructure management.
reinhard.perfler@boku.ac.at

Roberto Vallone is a geologist with the National Research Council of Italy (CNR); in particular, he works as researcher for the Institute of Environmental Geology and Geoengineering (IGAG). At IGAG his main task concerns geographic information systems applied to environmental geology.

roberto.vallone@igag.cnr.it

Sandra Lebersorger is a senior researcher at the Institute of Waste Management at University of Natural Resources and Life Science in Vienna with a focus on waste prevention and collection.

sandra.lebersorger@boku.ac.at

Sandra Nicolics is a junior research fellow at the Institute of Sanitary Engineering and Water Pollution Control of the University of Natural Resources and Life Sciences, Vienna, focusing on participatory planning and learning in multi-stakeholder processes.

sandra.nicolics@boku.ac.at

Stefan Salhofer is associate professor at the Institute of Waste Management at University of Natural Resources and Life Science in Vienna with a focus on waste recycling and life cycle assessment.

stefan.salhofer@boku.ac.at



ISBN 978-961-254-707-3



9 789612 547073