REAL CORP 2020

Manfred SCHRENK, Vasily V. POPOVICH, Peter ZEILE, Pietro ELISEI,
Clemens BEYER, Judith RYSER, Christa REICHER, Canan ÇELIK (Eds.)

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LIVABLE CITY REGIONS
FOR THE 21ST CENTURY

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CORP – Competence Center of Urban and Regional Planning

Kompetenzzentrum für Stadtplanung und Regionalentwicklung

Klosterneuburger Straße 121/36, 1200 Wien, Österreich

office@corp.at, https://www.corp.at

TEAM

Manfred SCHRENK
Clemens BEYER
Wolfgang W. WASSERBURGER
Judith RYSER
Christa REICHER
Canan ÇELIK

PREFACE

Manfred SCHRENK,

Conference Director,
President CORP – Competence Center of Urban and Regional Planning

WELCOME to REAL CORP 2020, the 25th International Conference on Urban & Regional Development and Spatial Planning in the Information Society!

REAL CORP 2020 under the topic "Shaping Urban Change" tries to explore the common things in different trends which can be seen in urban development around the globe.

Historic administrative boundaries do not represent real urban structures any more, cities expand beyond these boundaries and form metropolitan regions, which may even result in transnational functional urban areas and agglomerations. In almost all cases it is of utmost importance to coordinate urban development between several governments, administrative authorities and institutions on different levels, but this task turns out to be a quite difficult one.

Cities and regions are hungry for resources and see themselves opposed to density and environmental problems as well as other threats, nevertheless sustainability, resilience, high quality of life and considerate exploitation of natural resources are central goals of urban development. New technologies and digitisation play an essential role in the development of cities, urban regions and metropolises – without appropriate urban, environmental and mobility technologies it would hardly be possible to see urban development, maintenance of functionality and creation of livable urban areas.

In some parts of the world – particularly in China and India, but also in Japan and South-East Asia, and in parts of South America, Africa and the Gulf region – cities and metropolises are growing undamped and hundreds of millions of people are attracted to cities. However, in numerous European cities and agglomerations we can currently see two kinds of processes which may appear to be contradictory at first glance: reurbanisation and regionalisation. The return to core cities as a place of life has a lot of reasons, but it is strongly linked to changes in the working environment and the trend to combine working and living much more as it were possible in suburban fringe areas. But many city centres are lacking affordable housing space, whereas there are plenty of vacancies in the surroudings. Wrong allocations create unnecessary commuter flows.

REAL CORP 2020 aims to discuss strategies and concepts for quality change management in the light of the challenges outlined above, which arise in neighbourhoods, cities, urban regions and metropolitan areas. This also raises the question of who the actual actors of current urban, regional and metropolitan regional development are and what role planners can play in the corresponding scenarios.

The renowned RWTH Aachen in the historical European medium sized city of Aachen, in the German federal state of North Rhine-Westphalia with its rich mining and industrial tradition, located in a cross-border city region in the border triangle Germany-Belgium-Netherlands, is the ideal place to discuss these developments and challenges with experts from all over the world.

This year we brought together some 250 participants from more than 40 countries worldwide. The main goal of the REAL CORP conference series isto bring together leading experts in the field of spatial planning, geoinformation and related disciplines to exchange their knowledge, share their ideas, discuss current

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developments and get together for face to face networking leading to the development of new thoughts, partnerships and projects. The success of the REAL CORP conferences is – clearly without doubt – the result of the efforts of participants, reviewers, and the conference organising team consisting of CORP association and RWTH Aachen – Department of Urban Design. We would like to acknowledge the Reviewer Team and Programme Committee members for their valueable voluntary help with the review process. Our thanks go to all participants and authors of the submitted papers as well.

The proceedings of this year's conference contain 122 scientific papers; 98 of them were selected after a double-blind, double-stage (for both abstracts and full papers) peer-review process for publication and presentation at the 25th International Conference on Urban Planning and Regional Development in the Information Society, REAL CORP 2020. The non-reviewed papers were accepted by the programme committee after a double-blind abstract review. The conference is held from 15 to 18 September 2020 in Aachen, Germany, in co-operation with RWTH Aachen – Department of Urban Design and Ministry for Regional Identity, Communities and Local Government, Building and Gender Equality of the Land of North Rhine-Westphalia.

Welcome to Aachen! Have a great conference!

Manfred SCHRENK, Clemens BEYER & the REAL CORP Team

Editors – Herausgeber:
DI Manfred SCHRENK, President CORP – Competence Center of Urban and Regional Planning, Vienna, Austria
Prof. Dr. Vasily V. POPOVICH, SPIIRAS, St. Petersburg, Russia
Dr.-Ing. Peter ZEILE, TU Kaiserslautern, Kaiserslautern, Germany
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Prof. Christa REICHER, RWTH Aachen; Aachen, Germany
Canan ÇELIK, M. Sc., RWTH Aachen; Aachen, Germany

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office@corp.at, https://www.corp.at

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Finding a Midpoint between Civil and Military Use. The Case of Villaputzu (Sardinia, Italy)

Ginevra Balletto, Alessandra Milesi, Giuseppe Borruso, Luigi Mundula

(Associate prof. Ginevra Balletto, University of Cagliari, Department of Civil and Environmental Engineering and Architecture - DICAAR), (balletto@unica.it)
(Eng. Alessandra Milesi, University of Cagliari, Department of Civil and Environmental Engineering and Architecture - DICAAR), (alessandra.milesi@gmail.com)
(Associate prof. Giuseppe Borruso, University of Trieste, Department of Economics, Business, Mathematics and Statistics "Bruno de Finetti" - DEAMS), (giuseppe.borruso@deams.units.it)
(Aggregate prof. Luigi Mundula, University of Cagliari, Department of Civil and Environmental Engineering and Architecture (DICAAR), (luigimundula@unica.it)

1 ABSTRACT

The paper addresses the issue of the concurrent use of areas for military and civil activities. In particular, the paper analyzes the effect of planning tools on the valorization of a territorial enclave, namely a military training area located in the coastal area of the municipality of Villaputzu (South Sardinia, Italy), that is, moreover, a Site of Community Importance. In this area, thanks to an institutional agreements between the Municipal Administration of Villaputzu and the Ministry of Defense, has been possible define the coexisting ways where is an important coastal military easement. and the use of the coast for recreational tourism purposes through a specific planning tool. In this specific case, the Local Coastline Plan (LCP) has been identified as the planning tool, which better addresses the co-existence of apparently opposite land uses and interests, as those expressed by the local municipality and those expressed by the military hierarchy. The assessment method is based on the capacity of the Local Coastline Plan (LCP) and the Site of Community Interest Management Plan (SCIMP) to create ecosystem services in the military enclave. The evaluation of the LCP and SCIMP shows how their combined action favors the environmental enhancement of territory, contributing to the formation of ecosystem services, The area, initially subject to different constraint (military easements and SIC rules) evolve, by that way, from 'anticommons' to 'semicommons', guaranteeing sustainable renewal of economic development of the area and looking to become 'commons' through planning of ecosystem services.

Keywords: Protected areas and spatial planning, strategic environmental assessment, landscape connectivity, semi commons, Sardinia - Italy

2 INTRODUCTION

State property includes a various set of assets They consist of the 'necessary state property' (which includes the maritime state property, the water state property and military property) and from the "accidental state property" (which includes roads, railways, aeronautics, aerodromes, aqueducts and cultural properties). Furthermore it consists of other assets, equally subject to the regime proper to the public domain, belonging to other administrative bodies as regions, metropolitan cities, provinces, or municipalities. Public use is exercised on state property (Angiolini, 2018), i.e., the community can enjoy its benefits directly, as in the case of beaches or museums (Imperiale, 2018), or indirectly, in the case of ports or airports. The main characteristic of these goods is their inalienability. Among the assets owned by the public, those relating to military uses also take on particular importance in relation to the fact that military defense is configured, in strictly economic terms, as a pure public good—non rival and non-excludable—and therefore, as an asset, the benefits of which fall indistinctly on the totality of the population, a fact that partly explains the huge amount of financial resources that the various states allocate (Caruso, 2018). After a descending phase in the 1990s, starting from 2000, military spending has in fact been continuously growing.

As shown in Figure 1, in 2018, the United States of America was the leading country in military spending of the sector, with 649 billion dollars - worth 36% of the world military spending and 3.2% of its Gross Domestic Product (GDP), followed by China with 250 billion dollars—14% of the world military spending and 1.9% of its GDP. In this ranking, Italy occupies 11th place, with 27.8 billion dollars (equal to 1.5% of the World spending and 1.3% of its GDP). The state properties, on the one hand, can be traced back to the so-called 'enclaves', which are closed areas defined by administrative or cultural characteristics different from the surrounding territory and on the other hand, they have characteristics typical of the so-called

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'anticommons', first introduced by Michelman[1] (1982), in contrast to that well-known common (Hardin, 1968; Marciano et al., 2019).

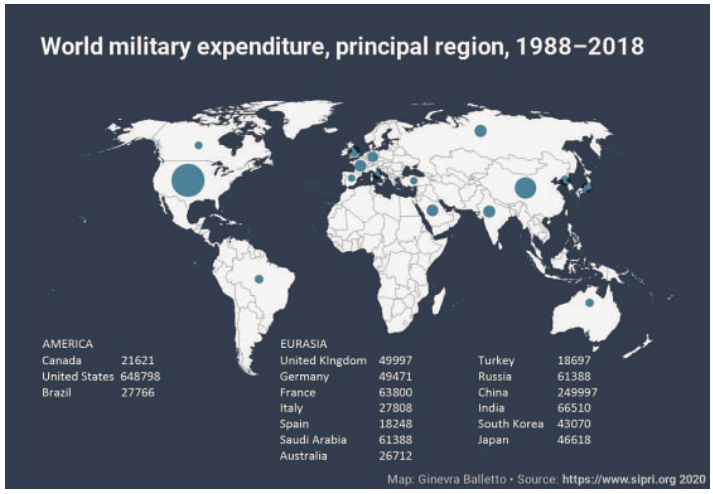

Figure 1: World military expenditure, by region, 1988–2018. Author: G Balletto

This concept was then widely developed (Heller, 1998; Heller and Eisenberg, 1998) through the theory concerning the under-use of a resource caused by the right of ownership, and therefore of exclusion, legitimately attributed to a multitude of subjects. Since it is sufficient for only one of the subjects to exercise their rights, it is clear that it is very probable, due to the high transaction times and costs necessary to reach a satisfactory agreement for all, that the fruition of that will lead to a blocking situation in which 'no one has the actual privilege of use' (Heller and Heisenberg, 1998). This is what happens in a by now recurrent form, in the occasion of the dismissal of the state property, both in the urban areas and in extra-urban ones (Gastaldi and Camerin, 2017). Activities carried out span from training of national and foreign units to testing missile prototypes and targets, from quality tests in cooperation with industries and organizations in the aerospace electronics sector and activities related to scientific research, etc. Their impact (Odoni, 2018; Esu and Maddanu, 2018) is significatively negative on the territory directly concerned and also for local communities, also under form of constraints expressed through the form of easements. In particular, military easements involve limitations or prohibitions that can be imposed both on private and public assets located near military installations, as, for example, to limit the buildings height. On the one hand, it is true—as evidenced by several studies (Hreško et al., 2015; Špulerová, 2013; Zentelis, R and Indenmayer, 2015; Silva Arimoro, 2017; Ellwanger et al. 2016; Reinhardt et al., 2019) that military goods and easements perform a substantial function of indirect landscape protection. On the other hand, the intensity and concentration military tests and training use of fuels and propellants, have a significant impact on the environment and biodiversity (Jenni et al., 2012), whose possible redevelopment may require expensive and difficult land reclamation works, even if the alleged correlation between military activities and the anomalous appearance of damage to health is still not completely defined. Finally, it should be noted, from the economical point of view, that in territories used for military training the potential sources of economic development, as agriculture fishing and tourism are damaged. In particular, the failure to take off the tourist industry, is both due to the unavailability of the sites, and to the interference that military activities have with the normal process of tourist settlement. It is also true, however, that this 'cumbersome' presence is connected to a related economic activity, mainly service activities but also industrial, in order to satisfy the needs of the military staff (Payolo et al., 2010). . The current orientation of several European countries is aimed at the rebalancing of military easements and the closing down of settlements (Camerin and Gastaldi, 2018). In Italy these procedures have often turned out to be cumbersome and slow due to the frequent change in the regulatory framework. Anyway, overcoming the exclusively military destination of certain areas often require guarantees of naturalistic protection (Ellwanger and Reiter, 2019). In such a framework, the concept of semicommon (Smith, 2000) is well suited to be used for a new interpretation of those areas that present a mixture of civil and military uses in time and space. This concept, in fact, interposed between that of

[1] "[A anticommon is] a type of property in which everyone always has rights respecting the objects in the regime, and no one, consequently, is ever privileged to use any of them except as particularly authorized by others." (Michelmann, F, 1982, p.6)

commons and anticommons, establishes an interaction between public and private property (Angiolini, 2018), and 'allows the right holders to benefit from the joint use of the resource' (Bertacchini et al., 2009). The semicommons incorporate all private collective rights, but at the same time attribute a series of public rights to other subjects, such as those arising from military easements generating positive effects (figure 2).

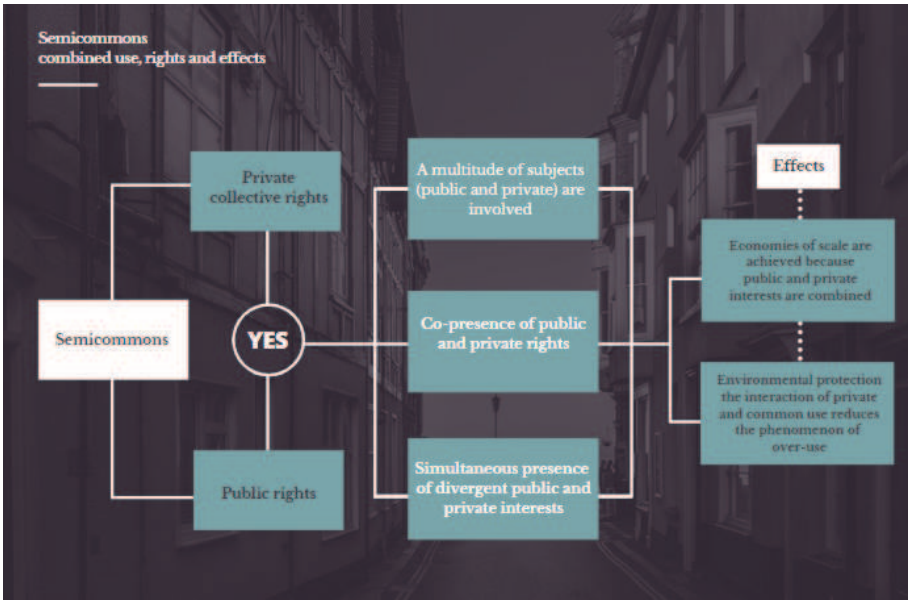

Figure 2: Semicommons combined use, rights and effects (Authors: G. Balletto and G. Borruso)

3 THE SARDINIAN MILITARY ENCLAVE

In Italy, military easements date back to the 1950s and derive from international agreements signed by Italy as a defeated country, at the end of World War II, in particular by the bilateral agreement 'Mutua Sicurezza' (Reciprocal Security) (1952) under which the United States imposed military bases in Italian territory. These agreements provide for the limitation of the right of ownership in the areas adjacent to installations of military interest. In 1976, the first law governing all matters of military easements was issued (L. December 24, 1976, No. 898 'New Regulation of military easements), which provided for the establishment, in each region, of a joint commission with the task of assessing the compatibility of military programs with territorial development plans. With the National Law 104/1990, the regions most affected by military easements was identified to provide for a compensation. In particular, the Autonomous Region of Sardinia (ARS) is one of the regions where the presence of military bases and training areas is higher with a total area of approximately 234 km2 (figure 3): Capo Frasca, Teulada, and Salto di Quirra (Military Proving Ground of Salto di Quirra, MPGSQ).

The MPGs together with the military easements (Perelli, 2017) account for about 1.5% of the total surface area of Sardinia which, in addition to the block of the air spaces during the trainings, determine that in some periods of the year a great part of the island is concerned in different ways by military activities (Figure 3).

Even if the great presence of military settlements confirm the strategic role of Sardinia in the context of the political–military system of the North Atlantic alliance related to control in the Mediterranean, it requires a complex system of easements, consisting in the permanent and/or temporary prohibition of use of internal and coastal areas, and of flight in particular air spaces.

During the last 20 years to change this situation the ARS started a dialogue, formalized in several agreements with the Italian State (namely the Ministry of Defence) defining demilitarization and economic compensation (Balletto et al., 2020). In figure 4 is shown the list of the main agreements and memorandum of the Ministry of Defense and ARS, inherent the refunds to Municipality and the military activity disposal.

The agreements, however, has not generally had the desired effects, as the ARS pushes for the non-onerous transfer of state property, while municipal administrations push for ownership to activate the territorial development (Colavitti et al., 2016).

The novelty has been the memorandum between the Ministry of Defense and the ARS dated 18 December 2017, that stated the suspension of the training within the MTASQ from 1 June to 30 September in order to

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guarantee the exploitation and use of the coast, in line with the Natura 2000 network and the regional landscape plan (PPR).

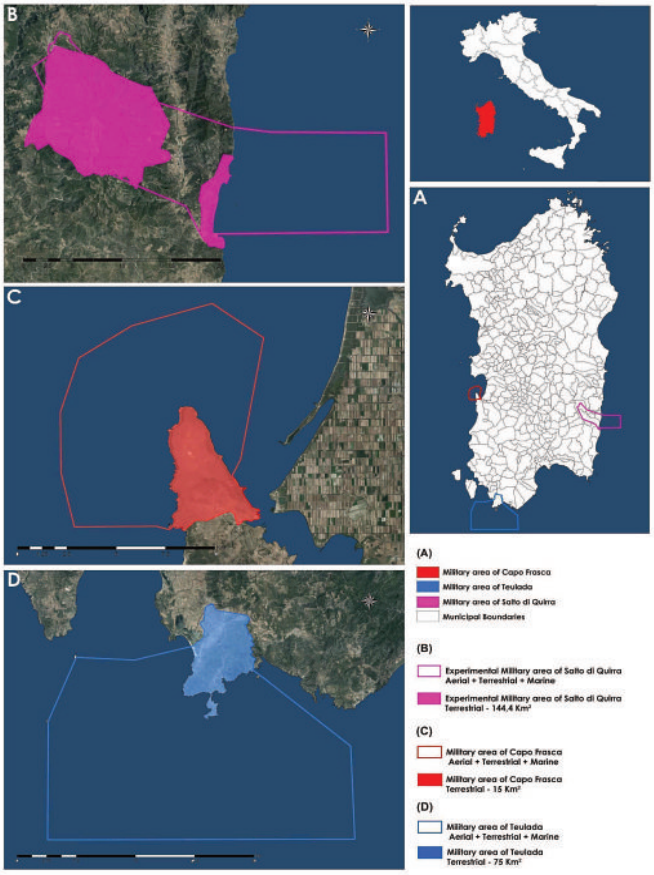

Figure 3. Maps of military areas in Sardinia - Italy (Author: A. Milesi in G Balletto et al Military Training Areas as Semicommons: The Territorial Valorization of Quirra (Sardinia) from Easements to Ecosystem Services. Sustainability, 2020, 12.2: 622)

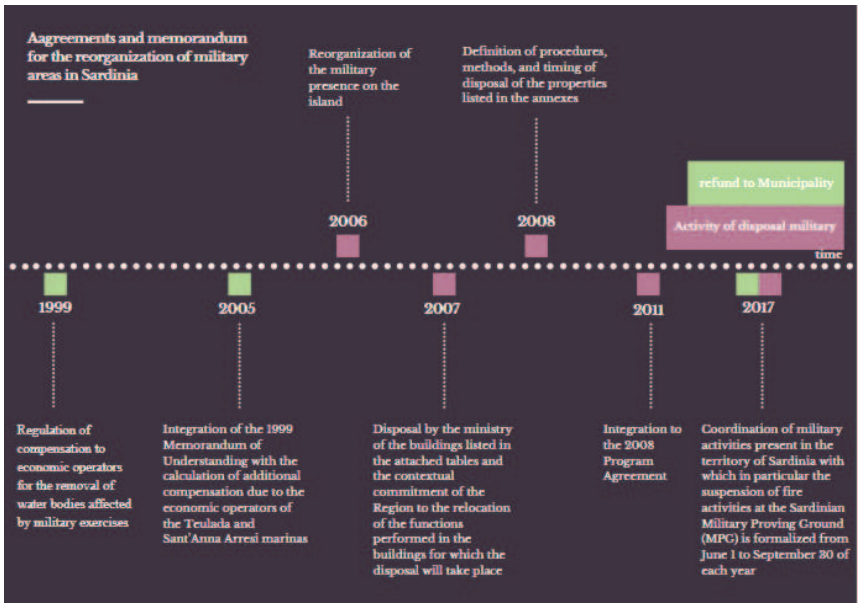

Figure 4. Main agreements and memorandum for the reorganization of military areas in Sardinia. (Author: G Balletto)

Recently, an agreement between the Ministry of Defense and the municipality of Villaputzu allowed the tourist use on the beach of Murtas. In 2017, it was included in the regional list of bathing beaches, thus allowing the municipality of Villaputzu to include this beach within its Local Coastline Plan (LCP).[2]

[2] It's a municipal plan that define the structure of the coastlines through an integrated and systemic management and aims to guarantee the preservation and enhancement of the territory which guidelines are defined by ARS.

4 THE LCP OF VILLAPUTZU AND THE MILITARY PROVING GROUND

The MPGSQ (Codonesu, 2013) is located in the southeastern part of Sardinia with 144.4 km2 of easements that accounts for 62% of all military easements in Sardinia. The municipality of Villaputzu covers about 181.25 km2 and is the most affected by the MPGSQ, with about 41% of the land area occupied by military easements. The peculiarity of the area is given by the presence of a site of community interest (SCI)[3] identified with code ITB040017 and name Stagni di Murtas e S'Acqua Durci.

Even if the divergent strategic objectives - environmental and military - could converge, for a long time was not possible to find a midpoint to counterbalance the different needs transforming the area into an anticommon. The possibility of making the coastline accessible to users was reached only with the recent state–region agreements (2014–2017), which allowed the use of the coast for tourism purposes in a limited period of the year (June 1–September 30), thus allowing the municipal administration of Villaputzu to equip itself with a LCP.

The planning and management of the coastal environment requires careful assessment of both coastal evolutionary trends, such as marine and hydrodynamic weather phenomena, and the phenomena of increasing anthropic pressure connected to tourist use in order to integrate the planning and management of the coastal environment between risk mitigation and conscious use (Marx and Liebenberg, 2019; Seidel et al., 2019). The LCP and the SCI Management Plan (SCIMP) (Leone and Zoppi, 2019) were identified as the main instruments for planning, particularly to allow coastal municipalities to regulate the use of maritime state-owned areas.

The regulatory system where the LCP is inserted concerns the reorganization of maritime state property concessions. Regional law foresees that the municipalities are obliged to draw up the LCP as an integral and substantial part of the municipal urban plan. In particular, the LCP regulates the use of the coasts and of contiguous territories for recreational tourism functions, dividing the coast in relation to the specific environmental characteristics, establishing the use and the related support services.

The LCPs in Sardinia often act within the territories of the Natura 2000 Network. Such a network represents the main instrument of the European Union policy regarding the conservation of biodiversity—established pursuant to Directive 92/43/CEE 'Habitat' and subsequent national transpositions—to guarantee the long-term maintenance of natural habitats and threatened flora and fauna species, divided into Sites of Community Interest (SCI), Special Protection Areas (SPAs), and Special Areas of Conservation (SAC). According to the recent literature, these areas are recognized as central for the creation of ecosystem services (Santolini et al., 2015).

4.1 Local Coastline Plan (LCP) And Management Plan Of The Site Of Community Interest (Sci) Of Murtas Beach - Villaputzu Sardinia, Italy.

The Villaputzu LCP developed in this framework in addition to the state-owned maritime areas, also governs the contiguous areas, regulating road and pedestrian access to the areas in order to create an integration between the coast and the areas not immediately close to the coasts, thus also directing tourist flows towards less privileged areas.

In particular, the Murtas beach LCP proposes the following strategic objectives:

- guarantee the conservation and protection of local coastal ecosystems, with reference to habitats - Directive 21 May 1992, 92/43 / EEC and subsequent amendments;
- harmonizing local actions to ensure sustainable development, promoting measures to reduce degradation and soil consumption processes;
- encourage environmental requalification through renaturalization projects;
- promote innovation and diversification of the tourist offer; and regulate the various activities for the purposes of integration and complementarity between them.

The Villaputzu LCP also affects the MPGSQ enclave. This constitutes the first case in Sardinia of coastal planning that intends to reconcile the military activities with the tourist ones, in compliance with the current

[3] Sites identified within the 'Habitat' directive 92/43/EEC, for the conservation of natural habitats and species of wild flora and fauna of community importance.

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legislation in terms of health and safety and in the framework of environmental monitoring conducted by the ARS.[4] In the same territorial context it is present the SCI called 'Ponds of Murtas and S'Acqua Durci' (code ITB040017) located in the coastal sector of the mouth of the Rio Quirra, in central-eastern Sardinia, that includes the portion of territory that from the promontory of Torre Murtas reaches Capo San Lorenzo and extending for an area of 7.4 km2. The management plan (SCIMP) regulates the SCI, which is consistent with the provisions of the art. 6 of the 'Habitat' Directive and of the art. 4 of Presidential Decree 120/2003, and has the objective of guaranteeing the conservation and protection of the habitats and species of fauna and flora, implementing protection and management strategies capable of allowing the maintenance of areas in optimal conditions, even in the presence of human activities, and thus favoring the maintenance of ecosystem services (Figure 5).

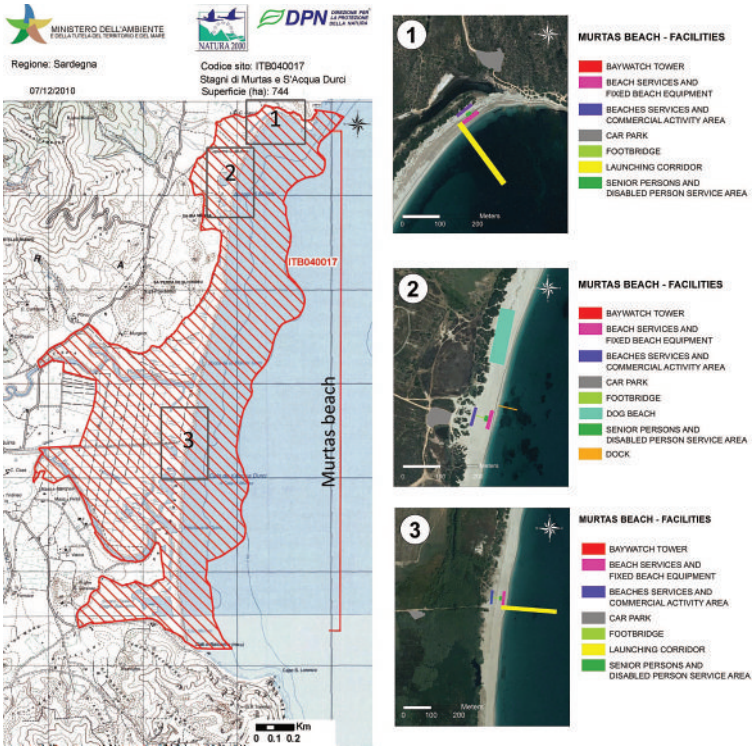

Figure 5. Sites of Community Interest (SCI) ITB040017 'Stagni di Murtas e S'Acqua Durci'. Murtas beach and the main areas of LCP (1,2 and 3). Author: A. Milesi.

4.2 The role of ecosystem Services in the transition from anticommons to semicommons

According to the definition given by the Millennium Ecosystem Assessment (2005), "the multiple benefits recorded by ecosystems for mankind" are expressed through four main categories: Life support, such as the nutrient cycle, soil formation, and primary production; procurement, such as the production of food, drinking water, and materials or fuel; regulation, such as climate and tide regulation, water purification, etc.; and cultural values, such as educational, recreational, etc. In this sense, the importance of including ecosystem services in planning processes is supported by a vast literature. In fact, the overcoming of the sectoral approaches (Geneletti, 2013; Blouin, 2013; Baker et al. 2013; Zoppi et al. 2018), oriented to the coherence between the economic and environmental dimension (Danley et al. 2016), build the prerequisites for the integration of ecosystem services within environmental planning. In particular, the transition from anticommons to semicommons is activated through the integrated environmental planning of ecosystem services. Therefore, to evaluate this integration referred to the case study, the methodology proposed by Mascarenhas et al. (2015) was applied to the management plan of the SCI and to the Local Coastline Plan (LCP) of Murtas beach by searching for the following keywords (figure 6).

[4] http://82.85.20.38/profili/stazione/profilo/id/665

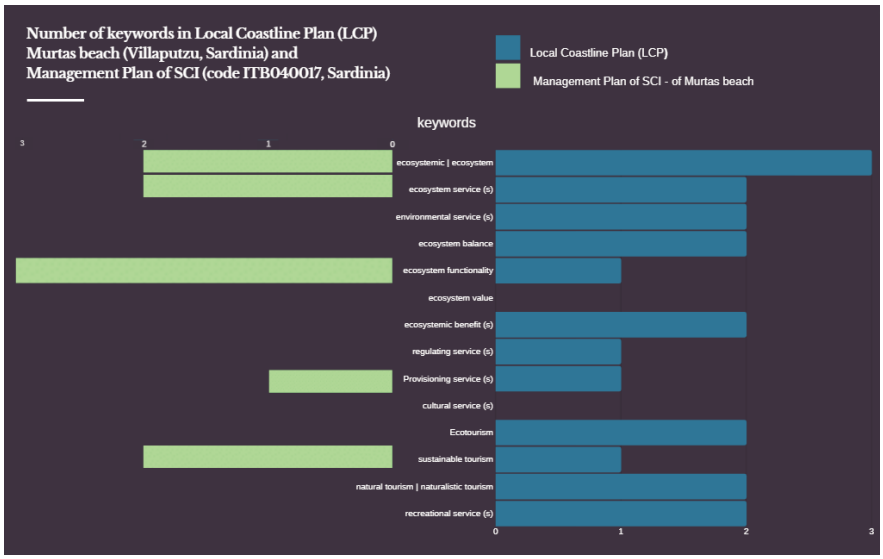

Figure 6. Number of keywords in Local Coastline Plan (LCP) Murtas beach (Villaputzu, Sardinia) and management plan of SCI (code ITB040017, Sardinia). Authors: G. Balletto

Figure 6 shows how the selection of the keywords related to the ecosystem services present in the LCP Murtas beach are highly representative in quantitative terms with respect to the management plan of SCI code ITB 040017. This confirms the role of the LCP strategy (Murtas beach) in the transition from anticommons to semicommons of the military proving ground of Villaputzu (MPGSQ). Such a concept seems nearly straightforward and obvious; nonetheless, it is not explicitly cited when considering this kind of mix use: military and tourist. In other words, through the LCP - Murtas beach- ecosystem services it is possible to activate the transition of anticommons towards semicommos.

5 CONCLUSIONS

The proposed approach highlights how an integrated environmental planning of ecosystem services can allow the transition from anticommons to semicommons, where multiple interests coexist. This transition is in fact a fundamental phase, often neglected in environmental planning, but which requires the utmost attention during changes in the use of the territory and in particular in the occasion of the disposal of public assets. In the study case of the Villaputzu municipality, Murtas beach this transition has been favored by the LCP, local coast planning, in coherence with the environmental protection policies (SCIMP) and the military regulations. In particular, the coexistence of multiple military, public, and private interests found a synthesis in the LCP. The transition from anticommon to common of the Villaputzu military enclave was in fact possible due to ecosystem services presence. In particular, the condition of semicommon good incorporates the private sector related to tourism and beach services. In the presence of this regime (semicommons) the following two effects arise, deriving from the combined use: 1. Economies of scale obtained thanks to the combination of public interests (military activities) and private (services seasonal tourist); 2. environmental protection: the interaction between private use (coastal use plan (LCP) and the common (management plan of the SCI of Villaputzu) reduces the phenomenon of overuse. In this sense, ecosystem services offered in the LCP, Murtas beach allow responsible use based on the dynamism of the natural context. In fact, the military enclave has led to an anticommons, but it is also true that it has preserved the coast, prohibiting the fruition. This prohibition allowed the natural beach to evolve without human interference in the Murtas beach. In this sense, the LCP is inserted and proposes tourist use compatible with conservation and valorization of the natural heritage. It should be noted, however, that the research carried out appears to be at an initial stage, and with little evidence of other cases in sensible areas around the world. To the authors' knowledge, no other cases have been widely tackled in the literature and in spatial planning actions. The authors in particular highlighted, in theory and practice, how a concurrent approach on planning can be adopted, allowing de facto multiple targets to be addressed: Military operations, environmental protection and management, and tourist recreational use.

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