



CHINA AND ITALY: ROUTES OF CULTURE, VALORISATION AND MANAGEMENT



Edited by
Heleni Porfyriou and Bing Yu



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CHINA AND ITALY: ROUTES OF CULTURE, VALORISATION AND MANAGEMENT

EDITED BY
HELENI PORFYRIOU AND BING YU

This series of volumes comprises research outputs that have been achieved due to the financial contribution of the National Research Council of Italy (CNR) and the the Chinese Academy of Cultural Heritage (CACH) within the context of a Bilateral Agreement of Scientific and Technological Cooperation between these two Institutions.

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FOREWORD

GILBERTO CORBELLINI

Director, Department of Social and Human Sciences, Cultural Heritage, National Research Council of Italy - CNR

The National Research Council of Italy - CNR and the Chinese Academy of Cultural Heritage - CACH during the past three-year (2016-2018) funded a Joint Research Project on "Routes of culture: enhancement and management of large-scale heritage sites. Via Appia - Roman Consular street - and Grand Canal of China". The study, led by an Italian and a Chinese research group, was aimed at improving dialogue between the two cultures in order to collaboratively promote the conservation, management and enhancement of large-scale cultural heritage sites in both countries. The choice fell on two world-famous sites: the Chinese Grand Canal (Beijing-Hangzhou Grand Canal), which is the oldest artificial canal in the world and a UNESCO site and the Appia Antica (*Appia longarum regina viarum*) one of the first and most strategic roads built by the ancient Roman Republic. The sites have been selected not only for their history but also for their recent developments and management.

The project was carried on by the Institute for the Conservation and Valorization of Cultural Heritage – ICVBC of the CNR. The ICVBC studies the conservation and enhancement of cultural heritage with a multidisciplinary approach and is part of the Department of Social and Human Sciences, Cultural Heritage - DSU. DSU coordinates the research activities aimed to the understanding, diagnosis, restoration, exploitation and dissemination of tangible and intangible heritage in Italy and other countries in which the CNR operates.

The scientific methods and technologies applied to the study of cultural heritage can be considered as a complex system of integrated approaches, rich in cultural and social implications. Conserving the identity values of a population contains both positive and negative consequences for what concerns the local economy of the heritage sites territories. Unfortunately, the daily scientific activities in this field sometimes is extremely technical and analyzes, processes, technologies, legal aspects are therefore perceived as distant from the objectives and their "cultural" dimensions.

The challenge of the science of cultural heritage is to bridge the gap between the technical activities and the real meaning of the so-called "cultural asset". Cultural heritage should be seen as the result of innumerable human choices, stratified over the centuries and millennia. This make cultural heritage a vital part of a community, as the result of sensitivity, thoughts, expectations, problems of men and women

who, with their identities and personalities, have built the reality in which we live today.

The final goal of heritage science is to preserve social identities and senses of belonging of population making the cultural heritage recognizable and intelligible for future generation. The CNR and the DSU work to celebrate and honor not only culture, research and expertise, but also the cultural continuity between past and present. Experiences such as the Sino-Italian Joint Research Projects address this challenge contributing to the construction, conservation and transmission of our common cultural heritage.

CHAI XIAOMING

Director General, Chinese Academy of Cultural Heritage - CACH

I am glad to see the book as one of the fruits growing out of the bilateral cooperation between CACH and CNR. As the introduction of the project – bridging cultures – indicates, the book also has evidenced the fruitful exchanges bridging CACH and CNR, and beyond.

Through the bilateral cooperation, as shown by the papers in the book, refreshing and inspiring light have been shed on complex issues concerning valorization and conservation of large cultural routes, the theme of which indeed deserves academic comparison from multi-cultural perspectives to comprehend the evolution of research, conservation and management under different social contexts.

The cooperation has also set up bridges among more institutions from China and Italy, such as those from Huai'an and Zhejiang from China, and MiBACT from Italy. This is especially valuable for both the Grand Canal and Via Appia - two most famous cultural routes in world history yet relative newcomers in heritage conservation, with the Grand Canal nominated into UNESCO Heritage list only in 2014 and Via Appia still on the Tentative List – to rally more forces for their conservation and valorization on local, national and international levels.

As much as I am pleased to see the book, I look forward to continuing and deepening this kind of bilateral exchanges with more and more fruits growing out of it. So CACH would like to further our cooperation with CNR and provide all necessary support, to strengthen and sustain the bridge between the two parties, and cultures behind.

通过这本书，我很高兴见到中国文化遗产研究院和意大利国家科学委员会的合作结出了硕果。正如这个课题主题——文化纽带——所示，这本论文集也见证了中国文化遗产研究院和意大利国家科学委员会之间，并以此为平台在更广的范围内，丰富的交流成果。

书中论文表明，双方的合作研究促进对大型文化线路遗产保护利用管理复杂问题在一个更新、更广视角下的认识与思考。从多元文化角度开展学术比较研究，对于大型文化线路的价值研究、保护管理在不同社会背景下的演进，是非常重要的领域。

课题的研究也为更多中国和意大利文化遗产保护管理研究机构（如意大利文化遗产与活动旅游部、中国的浙江省和淮安市文物机构等）的交流与合作搭建了平台。中国大运河和意大利阿匹亚古道这两个在世界历史上具有重要影响的文化线路，在遗产保护领域却可称为是后来者——中国大运河2014年才被列入世界文化遗产，而意大利阿匹亚古道至今仍在预备名单之中。因此通过双方的合作来吸引更多力量团结起来加强两条文化线路在地方、国家和国际等各个层面的保护管理和推广利用工作就有特别珍贵。

因此，我很欣喜双方的合作研究取得了实实在在的成果，也期待这样的合作形式得以拓展和深化，能够在下期合作项目中取得更多的成果。为此，中国文化遗产研究院愿与意大利国家科学研究委员会竭诚合作，加强交流，并将继续给予必要的支持，使双方的合作成为多元文化交流的充满活力的纽带。

中国文化遗产研究院院长
柴晓明

INTRODUCTION

BRIDGING CULTURES

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The Bilateral project *Routes of culture: enhancement and management of large scale heritage sites. Via Appia - Roman Consular street - and Grand Canal of China* was financed by the National Research Council of Italy (CNR) and the Chinese Academy of Cultural Heritage (CACH) for the period 2016-2018. The research undertaken by the two teams aimed to promote a better understanding on cultural heritage conservation, valorisation and management policies and tools in the two countries particularly with reference to big scale heritage sites (see Porfyriou-Scaroina-Yu paper). In this sense the world famous sites of the Grand Canal (that became World Heritage Site in 2014) and of “Appia Antica” (*Appia Regina Viarum*, the Queen of antique consular streets) were selected as the most representative cases, both for their long lasting history and for their recent developments.

Large scale heritage sites are a very challenging subject, particularly in a globalized society like ours, and thus necessitate an integrated and multi-disciplinary approach in their identification, evaluation, conservation, management and development. This is even more true when we refer to territorial systems such as cultural routes. In this context, heritage sites are shaped by complex interactions between the present and the past, culture and nature, built and intangible assets and so on. In fact, along the system of the principal ancient routes of communication, both through water and earth, are still visible the traces of settlements, infrastructures, monuments (see Shuheng Zhang’s paper); all heritage assets of a rich and stratified past and potential resources for sustaining development opportunities for today, at a territorial scale (see Wang – Peng paper). The interpretation, conservation, enhancement and management of those complex heritage systems, characterized by an extraordinary density of historic stratifications and cultural values, as well as by the vitality of human present activities, produce multiple effects both on a tangible (socioeconomic and territorial) and intangible level (see Bing Yu’s paper). The elaboration, therefore, of any intervention strategy should be based on a better knowledge of the heritage in itself and on the evaluation of its regulatory systems, as well as its management policies, operations and impacts referred to the site in itself and to its broader territorial context. In this context see the papers by Bing Yu and Liu – Yu relative, respectively, to the relevant legislation for the Grand Canal and to the

application of Information technology as a valuable tool for research and management of such a large and complicated heritage site as the Great Wall.

More specifically, our research focused on the Grand Canal, which is a unique media between man and nature -- centred as it is on water -- and provides an ideal platform on which the heritage chain -- archaeological work, research and evaluation, planning and policy-making, preservation and intervention, management and monitoring of water resources, interpretation and utilization, community involvement and public service, ecological conservation and social sustainability -- leaves its multiple traces, thus offering a challenging management research topic (see Fang -- Wei paper). The case of the Grand Canal is even more interesting, considering its recent nomination as a UNESCO World Heritage Site, in 2014. It, thus, offered us the possibility to follow not only how the management plan was prepared before the nomination but also how it was implemented afterwards. Less effort has been made in the past on the follow-up tracking, so a feasible framework needs to be worked out in terms of methodology and technology in data collection and analysis considering the complexity of the heritage chain involved. With the help of systematic tracking and evaluation of the implementation of the management plan, a better understanding of many issues would be gained, such as, which regulations are relevant, to which extent visitors enjoy the site, which are the designation benefits for the welfare of local communities. In addition to the overall understanding of the protection and management of the Grand Canal the project focused on the case study of the city of Huai'an, thus, comparing state and city level measures and policies on heritage management (see Jianli Yu's paper).

"Via Appia", represented, instead, the Italian principal case study. Considered a *Regina Viarum*, Appia antica was one of the earliest and strategically most important Roman roads of ancient Rome. It connected Rome to Brindisi in southeast Italy, opening the Italian peninsula to the East, thus offering to Rome direct access to all trade routes with Greece, Egypt and the Orient and a privileged conduit for military expeditions. The wealth of trade favoured the emergence of a variety of activities (productive, economic, residential, etc.) also along the street. This flourishing of settlements and structures was also due to the presence of a series of aqueducts (with long stretches developing underground), as the Aqua Claudia, the Anio Novus, the Aqua Marcia, bringing water to Rome and to the villas spread all over the roman countryside. The idea for a large scale archaeological park starting from the centre of Rome and reaching out to the countryside, up to the Alban Hills, dates back to the Napoleonic period. However, only in 1988, the "Appia Antica Regional Park", was constituted by Lazio region, after tens of petitions and projects struggling for the defence of the Appia antica and its monuments. The park has a surface of about 3.400 hectares and comprises only 16 km of the antique Appian street, while nowadays more than 2.500 illegal buildings are calculated within its boundaries. The papers of part three of this volume describe the different faces of this development. "The Via Appia Antica" paper written by Rita Paris, director of the Appia Antica Archaeological

Park, presents the history and evolution of the park; while Maria Grazia Filetici focuses on the restoration interventions along the Via Appia and Giuliana Tocco Sciarelli describes the conservation policies in Appia, in the region of Campania.

The linear structure of both Chinese and Italian case studies and their similar use as routes of communication suggested to explore the cultural routes approach used in recent years, such as that of Via Francigena in Italy, <http://www.viefrancigene.org>; or of Via Egnatia in a European scale, <http://www.viaeognatiafoundation.eu/> in order to identify possible best practices and to support understanding from different perspectives. In this sense more papers on other routes, of a broader European and Chinese scale were invited for the book, such as the one of Fiorella Dallari on the European Roman routes of culture, of Pretelli – Favaretto on ATRIUM, of Haiming Yan on the Maritime Silk Road. In parallel, an analysis of the most significant economic components characterizing the two case studies and connected to the cultural values, as well as of the ongoing management projects, was carried out, in order to possibly identify the main factors that represent a source of social and economic benefit for the living communities and the different groups of concerned stakeholders (see Alessio Re's paper).

In October 2015, the Italian minister of culture Dario Franceschini announced the candidacy of the entire Appia antica as a cultural route, assigning an important grant for the census of all heritage assets along the route and the preparation of a GIS data bank (see paper by Biallo- Scaroina - Silvani). This initiative, known as the "*Appia Regina Viarum*" project, which coincided with the beginning of our project drove us to ask and obtain the Ministry's (MiBACT) collaboration in our project in order to have a more direct access to information and a better and more fruitful exchange between the two countries and the three institutions. In the context of this collaboration an international Seminar was organised in MiBACT on September 25, 2017, where the Ministry's work on the subject was presented (see Dora Di Francesco's paper).

In other words, this volume presents the outcome of this collaboration between the three institutions, enhancing mutual knowledge and promoting a long lasting cooperation among the two countries on conservation, valorisation and management of big heritage sites and cultural routes.

PART 1

**LEGAL TOOLS
IN HERITAGE CONSERVATION
IN ITALY AND CHINA**

HERITAGE PRESERVATION IN ITALY AND CHINA. LEGAL TOOLS AND INSTITUTIONS

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Keywords: Heritage preservation institutions, Heritage preservation legislation, Italy, China

THE CONSERVATION OF HERITAGE IN ITALY: A HIGHLY CENTRALISED STRUCTURE

The protection of cultural heritage: Institutions

Immediately after the unification of Italy in 1861, the country's cultural heritage and monuments had already been recognised as a valuable symbolic resource for constructing an Italian national identity¹.

The competent authority for the protection of cultural heritage in Italy is the State, specifically the Ministry of Cultural Heritage and Activities - MiBACT and its local branches; that is the Superintendences disseminated across the country. The origins of this highly centralised organisational structure can be traced back to two laws dating from the fascist period: Law 1089 of 1 June 1939 (on the protection of historic and artistic assets) and Law 1497 of 29 June 1939 (on the protection of places of natural beauty). In parallel with that legislation, in 1939 the pre-existing system of Superintendences was reformed by increasing their number from 28 to 58 and separating their technical competencies into archaeological superintendences (for antiquities), architectural superintendences (for monuments and historic buildings)

1 One of the first Acts in that direction was the creation of the National Library of Florence on 22 December 1861. (Traniello 2002).

and historical-artistic superintendences (for museums and galleries). Three years later with the adoption of the 1942 planning law, this legal framework was completed by defining the responsibilities of each body in relation to territorial management and planning: the task of protecting and conserving cultural heritage was entrusted to the State via the Ministry-MiBACT and its local Superintendences, whilst local authorities were responsible for the planning and management of development.

This attribution to the State of the responsibility for cultural heritage, considered as an inalienable asset of the nation and consequently of no economic value - thereby overriding all political resistance in relation to private property rights - was not only unaffected by the fall of the fascist regime, but was even enshrined in the new Constitution of the post-war Italian Republic; representing today in the contemporary European panorama a distinctive characteristic of Italy. In fact, Article 9 of the post-war Constitution affirms the central role of the Nation in protecting the landscape and the historic/artistic heritage: a centralised system of protection that was scarcely affected at all by the decentralisation policies which began in 1970 with the creation of the Regional Governments and that led in 2001 to a redefinition of powers under which the protection of cultural heritage, the environment, and the ecosystem was entrusted to the State whilst "the enhancement and appreciation of cultural and environmental heritage and the promotion and organisation of cultural activities" was entrusted to the Regions (art 117, lett.s).

This complex legislative structure, created over the course of a century, was given a unitary rearrangement in 2004 in the form of the Codice dei Beni culturali e del paesaggio [Code for Cultural Heritage and Landscape]. Here, the intention of the legislator was to configure the relationship between the State and the local authorities (municipalities, metropolitan cities) and territorial entities (provinces and regions) on a basis of cooperation and agreements between their different levels of competence. Ultimately, however, most of the "programme agreements for enhancement and appreciation" between the State and the Regions were never put to use; the division of competencies between the two administrative levels had created a problem that could only be resolved by an attentive constitutional revision.

Instruments for protection

The protection of any cultural asset always begins from a public "declaration" of its cultural interest: an administrative act that falls under the power of the State and specifically of the local Superintendence. This "declaration" means imposing a "constraint", which implies the supervision of the Superintendence, the acceptance of the limitations on the use of the asset according to the prescriptions of the Superintendence, the request of an authorisation for any proposed works, and places an obligation on the owner to guarantee the integrity of the asset. All of the "declarations" are brought together as a catalogue of cultural heritage subdivided into historical, artistic, architectural, archaeological, archival, demo-anthropological,

environmental, and landscape heritage assets. Any citizen or member of civil society has the right to propose the protection of an asset, and the task of the State is to evaluate the proposal and then to “declare” if it has “catalogued” the asset. In Italy, this catalogue is regarded as an open-ended document² with multiple functions: it places each asset under a “constraint”/vincolo, compiles an inventory of them all, monitors them, and programmes their maintenance and restoration. Each Superintendence (and/or other protection authority) manages its own catalogue and imposes its own conservation strategies on its own territory whilst at the national level via ICCD - the Central Institute for Cataloguing and Documentation, another list of assets (based on digital cataloguing) is maintained by MiBACT, which also establishes the standards and defines the directives for the work in the field that falls within the competency of the local Superintendences.

Protection as a concept

The most important aspect of protection in Italy is that it is a proactive concept which goes beyond the mere preservation of a cultural asset to include its “preventive and planned conservation”. The historic roots of this concept (the safekeeping of a patrimony) can be identified within the Catholic Church in relation to the management of the ecclesial patrimony, specifically in the “Rules and Instructions” emanated in 1582 by St Charles Borromeo for the conservation and protection of sacred buildings (Tosco 2014, 112).

In more recent time it is to Cesare Brandi, Director of the Istituto Centrale per il Restauro [the Central Institute for Restoration], founded in Rome in 1939, that we owe the first theoretical definition of “preventive restoration”. Subsequently in the 1970s Brandi’s pupil, and his successor as Director of that Institute, Giovanni Urbani, went on to develop a comprehensive theory and practice of “planned conservation”. This made provision for the global protection of a system of assets located throughout the country and led in 1986 to the publication of the “Carta del rischio del patrimonio culturale” [Map of Cultural Heritage at Risk]. Based on a system of digital maps, this tool made it possible to provide timely and detailed information on the vulnerability of individual elements of Italy’s heritage.

During that period Roberto Di Stefano developed the concept of “integrated conservation” in the field of architecture – a principle enunciated in the 1975 Declaration of Amsterdam – which provided not only for the technical and conservative restoration of an asset, but also for a more extensive project that included its fruition and its inclusion within a social and economic context that would receive it.

.....

2 A first “List of Monumental Buildings” prepared by the Directorate-General for Antiquities and Fine Arts was published in 1902. This went on to become a series, and continued until 1938 when it had reached Vol. LXXII.

Recent developments and the Reforms of the Minister Franceschini

During the past ten years significant transformations have taken place within the Ministry-MiBACT. The first of these was the transfer of the Office for Tourism Policy from the Office of the Prime Minister to the MiBACT (established by Law No. 71/2013), which was now given the new all-encompassing denomination Ministero dei Beni e delle Attività Culturali e del Turismo [Ministry of Cultural Heritage and Activities and Tourism]³. A new Directorate-General for Tourism was created to promote tourism development projects and policies nationally, and to maintain relations in the tourism field with the Regions, the European Union, and internationally (Tocco 2017)⁴. However the most significant changes came about as a result of reforms, begun in 2014 and now concluded, that were introduced during the period when Dario Franceschini was the Minister of MiBACT⁵.

Officially that complex process of reform under Franceschini, which radically reorganised and transformed the administrative structure of the Ministry, especially the governance of its peripheral offices, came into being as a consequence of a review of public spending. A reduction in expenditure meant that staff numbers could be reduced and also created the conditions for action to be taken on other matters such as the lack of integration between the “culture” and “tourism” sectors; the need to streamline the administration of the local offices- Superintendences (particularly in

3 Following the elections of March 2018, with the law of 12/07/2018 the Department of Tourism previously assigned to the Ministry of Cultural Heritage and Activities was transferred to the Ministry of Agricultural Policies. Thus, MiBACT became MiBAC, as it was before 2013. http://www.gazzettaufficiale.it/atto/serie_generale/caricaDettaglioAtto/originario?atto.dataPubblicazioneGazzetta=2018-07-12&atto.codiceRedazionale=18G00113&elenco30giorni=true

4 The Directorate with responsibility for Tourism Policy defines the strategies for relaunching Italy’s competitiveness on the international scene and for promoting the “Made in Italy” concept, whilst also ensuring support for the implementation of strategic projects to improve the tourism offer in the various different parts of Italy. In relation to the overall responsibilities of this Directorate, see www.beniculturali.it/mibac/export/MiBAC/sito-MiBAC/Luogo/Uffici/Struttura-organizzativa/visualizza_asset.html_1999341105.html.

5 These recent reforms seem to be have been dictated by a new awareness which, aiming at the economic recovery of the country, also attributes an economic value to “cultural” areas. It is striking to note how in Italy we have moved from an attitude of “culture doesn’t put food on the table” to a strategic direction of travel that sometimes seems to see culture mainly in terms of its economic spinoff and not its social effects (Settis 2002).

their relationship with the central offices); the need for Italy's museums to become autonomous; and to correct a perceived lack of interest in contemporary art⁶.

As a result of these changes, some sites considered particularly important were endowed for the first time with their own managerial and scientific autonomy (the Superintendences for Rome and Pompeii, having had direct control over vast territories, had already built up an autonomy of their own over the years) (Guzzo, 2003). Regional local museum networks were also established to ensure "the delivery, throughout the country, of the public service of fruition, enhancement, and appreciation of the institutions and places of culture entrusted to the State or howsoever entrusted to State management". So the first substantial transformation was the creation of these newly identified and now autonomous sites (mostly museums or archaeological parks), and regional local museum networks that were also given control of the less important museums previously under the responsibility of the Superintendences⁷.

Additionally, at the end of 2014 ten more new archaeological parks and museums of significant national interest were identified, giving them autonomy and specifying their limits of competence. Then in 2017 the remaining two archaeological parks - two of the most famous in the world, Pompeii and the Colosseum - were created by separating them off from their previous Superintendences and territories of reference. This renewal of the Ministry was completed by Ministerial Decree of 07 February 2018, which assigned the last of the archaeological sites that were entitled to issue tickets and had previously been assigned to the Superintendences, to the local museum networks, finally leaving the Superintendences with responsibility only for protecting some individual monuments and landscapes (Casini 2016).

The second major change (brought about by Ministerial Decree of 23 January 2016) was the reorganisation of the Ministry itself. "In order to further improve the performance of the administration in the protection of cultural heritage" this decree unified the multiple Superintendences that had previously dealt separately with archaeological, architectural, artistic heritage, establishing instead single Superintendences for Archaeology, Fine Arts, and Landscape, i.e., local offices with

6 On this topic see "Verso un nuovo MIBACT – La riorganizzazione del Ministero dei beni e delle attività culturali e del turismo" www.beniculturali.it/mibac/multimedia/MiBAC/documents/feed/pdf/Testo%20in%20formato%20PDF-imported-46099.pdf .

7 In accordance with Ministry requirements, the regional local museum networks must also "define common strategies and objectives for enhancement and appreciation in relation to their territorial areas of competence, and promote the integration of cultural routes for the fruition thereof as well as the tourism and cultural itineraries that derive from them". On this topic see www.beniculturali.it/mibac/export/MiBAC/sito-MiBAC/Contenuti/Ministero/visualizza_asset.html_1947521712.html

a mix of competencies that covered archaeological, architectural, landscape, and historical or artistic assets all together.

It is important to underline that these innovations were all closely inter-related, since the museums that were now assigned to the various new local museum networks had previously been integral parts of the old Superintendences (which via the assets in their own territories had of course been responsible for research aimed at acquiring knowledge of those assets and, consequently, for protecting them)⁸. To put it in a different way, these museums scattered across the country had not previously had any independent management of their own.

Today, the risk is that a block may be created because the Superintendences can now implement a form of protection that is not aimed at the enhancement and appreciation, since those aspects are now, instead, the responsibility of the local museum networks⁹. But knowledge, protection and enhancement are all parts of one single sphere; by dividing them up there is a risk that they may all be impoverished: an impoverishment of the museums on the one hand, due to the lack of exhibition turnover and isolation from the rest of the country, and impoverishment of the Superintendences on the other, in addition to a reduced availability of the instruments for protection and a loss of the disciplinary autonomy that is essential for proper protection.

There is another aspect that highlights even more starkly the different roles now carried out by the new Superintendences and the area museum networks: over and above their different disciplinary and cultural aspects, the local museum networks also have considerable economic importance because unlike the Superintendences, they have the power to act as contracting authorities and are therefore identified as spending centres. The Superintendences, on the other hand, have been left to administer an exclusively “bureaucratic” type of protection without any opportunity for actually implementing that protection on the ground: a task that is now delegated operationally to the regional Secretariats.

To sum up: we have described how the institutions responsible for the protection of cultural heritage in Italy have been administered: constructed gradually over many centuries not only via an evident cultural sensibility but also an effective regulatory

8 This separation also deprived the Superintendences of the revenues from ticketing which was also used for the protection and maintenance of monuments defined as “minor”.

9 On the other hand, in the case of museums, the declared intention of determining their autonomy seems to have failed without however modifying their strong link with the local area and thus with the Superintendences. On this topic see “Verso un nuovo MIBACT – La riorganizzazione del Ministero dei beni e delle attività culturali e del turismo” [Towards a new MIBACT - The reorganisation of the Ministry of Cultural Heritage and Activities”] www.beniculturali.it/mibac/multimedia/MiBAC/documents/feed/pdf/Testo%20in%20formato%20PDF-imported-46099.pdf.

system, they have gradually been revised to adapt to the changes taking place worldwide, with the intention of making protection an established and fundamental aspect of the country.

THE CONSERVATION OF HERITAGE IN CHINA: A HIGHLY DECENTRALISED SYSTEM

The general impression of China is that it has always been a very centralised country, not only during its long history of “Oriental Despotism” (Wittfogel 1959), but also throughout the decades of the Socialist planned economy from 1949 to 1978. In practical terms, however, the contemporary system for managing heritage¹⁰ has remained very strongly decentralised. With such a vast territory, local management would be a natural choice, although its negative consequences should be closely watched and counterbalanced to safeguard scarce and valuable public resources. The ways in which heritage is managed locally (decentralised), can be described in the following three ways.

The local administration system

The essential feature of the administration system for cultural heritage in China is “localised management”. Under Article 8 of the Cultural Relics Protection Law of the PRC¹¹ (CRPL), local governments at various levels are responsible for the conservation of cultural heritage within their own jurisdictions, whilst supervision and guidance are the responsibility of the State Administration of Cultural Heritage of the State Council (the SACH), and the cultural heritage administrative branches of local governments (CHBs).

The SACH is authorised to take charge of the protection of cultural relics throughout the country and has responsibility for strategic planning, the drafting of legislation, approving archaeological excavation projects, allocating central funding, providing professional guidance and coordination, and overseeing the exchange of collections between state-owned museums and exports. The local CHBs do not report to the SACH but to their own local governments, which also make the decisions on

10 Cultural heritage, more traditionally referred to as Cultural relics (Wenwu) in China, generally covers physical objects or sites of movable and immovable cultural heritage, but not intangible cultural heritage (the conservation of which resides with the Ministry of Culture and Tourism - the Ministry of Culture before March 2018).

11 A 2007 version in English is available at http://www.unesco.org/culture/natlaws/media/pdf/china/china_lawprotectionclt_entof, first promulgated in 1982.

urban and rural planning, staff recruitment and appointment, budgeting, and the daily management of cultural heritage.

One of the (negative) consequences of these arrangements is that they result in a weaker institutional mechanism for protecting heritage, particularly at a time when local governments are under extremely high pressure for development. Any local plan or project for economic development, poverty reduction, or even as mere speculation, that might have a negative impact on heritage, could easily make the CHB staff with responsibility for protecting heritage the hostages of the selfsame local government to which they report; if a local mayor is in favour of such a project, there is little that heritage staff can do to resist it.

The ambiguous state-owned asset management system

Socialist Public Ownership (Article 6 of the PRC Constitution) does little to compensate for the negative effects of managing heritage at the local level. Whilst many cultural relics¹² are owned by the state, that ownership is independent of the owner of the land and of the use entitlement attached to it¹³, which decentralises the conservation of heritage even more.

This decentralisation first begins from ambiguities in the legislation, which fails to specify any agencies that are authorised to exercise the right of state ownership over cultural relics. In practice this means that a “finders keepers” principle prevails. Although there are many important supposedly “state-owned” heritage sites, such as those along the Great Wall, these are being developed and operated for tourism purposes by the local towns, villages, or firms, with scant involvement of the CHBs. This initial ambiguity is then compounded by the much more serious ambiguity, which brings with it an extremely high cost for oversight, when a heritage asset owned by the state is on land that is not state-owned. In fact a great many state-owned heritage assets occupy land that is owned by third-party individuals or institutions or that involves stakeholders with conflicting interests, all in the absence of any clearly set out division of responsibilities (Yu 2014).

This ambiguity of responsibilities between administration and property ownership means that hundreds of thousands of state-owned relics, particularly archaeological sites, are left in an open form of ownership and that there are no specific institutions with responsibility for their daily management, leaving them at the mercy of the

12 According to CRPL, Article 5: “All ancient cultural sites, ancient tombs and stone grottoes are owned by the State. The designated monuments, historic buildings, stone steles, wall paintings and representative modern architecture, except where otherwise provided, are owned by State”.

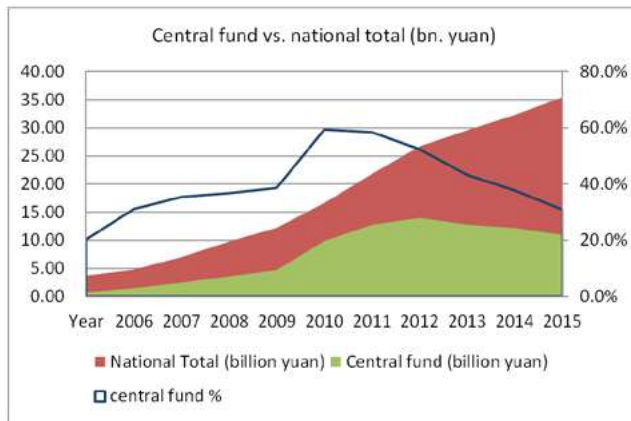
13 The same Article 5 specifies that “the ownership of the state-owned cultural relics will not change with any change of the land ownership and the right of use attached thereto”.

everyday doings of other owners and users. Even the nationally-instituted Cultural Heritage Protected Units (or CHPUs; for an explanation see “Categories and levels of immovable cultural relics” below) are operated at the local level. By chance, and only in Beijing, there are perhaps three or five heritage sites that come directly under the management of national-level institutions (one of which, the Forbidden City, is managed by the Forbidden City Museum, a department of the Ministry of Culture and Tourism).

An unbalanced funding mechanism

Although operational tasks and responsibilities are delegated to local levels, the funding of publicly owned heritage is relatively concentrated: an imbalance which, in a sense, only intensifies the same problems associated with decentralisation. Public funding comes from two sources: central government and various levels of local government. But even though central government funding is a substantial proportion of the total, it is only able to support a very small number of heritage sites and activities; most of the responsibility for allocating the remainder of the funding rests with the local governments.

Over the past ten years there has been a substantial increase in public funding for cultural relics, both nationally and locally. For a few of those years the centrally-allocated percentage was close to 60% of the national total, but by 2016 it had fallen back to 30% (Table 1).



Year	National Total (bn y)	Central fund (bn y)	central fund %
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2006	3.76	0.77	20.4%
2007	4.82	1.50	31.1%
2008	7.03	2.49	35.4%
2009	9.80	3.60	36.8%
2010	12.24	4.73	38.7%
2011	16.65	9.89	59.4%
2012	21.81	12.75	58.5%
2013	26.71	14.00	52.4%
2014	29.59	12.80	43.3%
2015	32.30	12.20	37.8%
2016	35.45	10.96	30.9%

Table 1 Cultural Relics Fund - National vs. Central, 2006-2016¹⁴

In any case central government funding can only provide support for a very limited number of conservation activities, such as the preparation of plans, restoration projects, safety and protection works, and interpretation facilities, and these only for national CRPUs (County-level Cultural Relics Protected Units) and UNESCO Heritage sites. The costs of land acquisition, for relocating residents, for infrastructure development, daily maintenance, servicing, salvage consolidation, and human resources all have to be financed by local government (Ministry of Finance, SACH 2013).

Seen from the viewpoint of local government, these very great disparities between central vs. local responsibilities and financial resources often lead to tension, because of the competing alternatives of conserving heritage and other urgent needs to fund works of public utility for housing, health, poverty reduction, and so on. For that reason, local governments may find themselves forced to combine

¹⁴ Prepared on the basis of SACH internal reports on National Cultural Relics Sectoral Statistics, 2006-2016

heritage conservation with other development activities, and may have to rely on land speculation to overcome their shortages of funding (CACH 2016; Zan et al. 2018).

INSTRUMENTS FOR PROTECTION

At the national level, the legislation for the protection of cultural relics consists of the CRPL (the Cultural Relics Protection Law), five State-Council regulations, nine Departmental Ordinances, and 56 administrative documents, along with other laws and regulations that also affect cultural relics from more general or specific perspectives such as the PRC Constitution, the General Principles of the Civil Law, the Criminal Law, etc. There are only two ad hoc, site-specific pieces of national legislation, and these only apply to major cultural itineraries: the State-Council Regulation on the Protection of the Great Wall (2006), and the Department Ordinance on the Protection and Management Measures of the Grand Canal Heritage (2012). Other laws and governmental ordinances for cultural relics apply at various levels of local government.

Professional institutions like ICOMOS China and the National Cultural Relics Conservation Standardisation Commission issue guidelines and standards, of which the Principles for the Conservation of Heritage Sites in China (ICOMOS China 2015) is one of the most influential documents. So far 33 national-level and 85 sector-level standards, pertinent to the cultural relics profession, have been published.

The heritage protection instruments for immovable cultural relics that are relevant to the Grand Canal, based on the law, regulations, and professional specifications, are briefly described below.

Categories and levels of immovable cultural relics

Immovable cultural relics in China are identified in six categories: sites of ancient culture; ancient tombs; ancient architectural structures; cave temples, stone carvings and murals; important sites and representative buildings of modern and contemporary times; and others (CRPL Article 3).

According to their historical, artistic and scientific value, immovable cultural relics are designated by the corresponding governments as National, Provincial, Municipal, or County-level Cultural Relics Protected Units (CRPUs). The 766, 722 registered immovable cultural relics in China include 4,296 national CRPUs, 17,116 provincial CRPUs and 117,128 municipal/county CRPUs (SACH 2016).

CRPU zoning and planning

One way in which the SACH and CRBs carry out their supervision at the various levels is via approval procedures. Within one year of their designation, all CRPUs are

required to set up a Protection Zone (PZ), and if necessary a Construction Control Zone (CCZ)¹⁵. Certain activities are not permitted within a PZ unless approved by the corresponding governmental level after they have been consented by CRBs at the higher level (SACH in the case of National CRPU, CRPL, Article 17). All proposals for construction within the CCZ of a CRPU are subject to consent by the corresponding level of CRBs before they can be submitted to the urban and rural development bureaus (URDB) for approval (CRPL, Article 18).

The CRPU Conservation Plan (CRPUCP) plays a vital role in several aspects. Comprehensive investigation, research and evaluation are prerequisites for a CRPUCP. A CRPUCP must identify PZs and CCZs, together with plans for their restoration, the proposed utilisation measures, and their maximum visitor capacity. For National CRPUs, the CRPUCPs are reviewed by the provincial CRBs together with the URDBs, and are issued by the Provincial Governments after the consent of SACH (SACH 2007).

Procedures for restoration projects

In principle, restoration projects – safeguarding and consolidation works, restoration, the construction of protective works, and relocation - must be carried out as provided for by the CRPUCP. Only institutions holding a Class I Qualification in Conservation Survey and Design, approved by SACH, are eligible for National CRPUCP preparation and restoration, relocation, and reconstruction project design (SACH 2014a). There are 106 institutions throughout China holding a Class I Qualification, of which 26 are based in Beijing (SACH 2016).

For National CRPUs, restoration projects are first approved for listing by SACH, based on their necessity and feasibility. Technical proposals for listed projects for national CRPUs are approved by provincial CRBs in consultation with advisory bodies designated by SACH (SACH 2014b). Listed projects are entitled to receive subsidies from central funding. Only institutions holding a Class I Qualification in Conservation Implementation are eligible for National CRPU restoration, relocation and reconstruction implementation projects (SACH 2014c). There are 183 such institutions in China, of which 29 are based in Beijing (SACH 2016).

RECENT DEVELOPMENTS AND TRENDS IN HERITAGE CONSERVATION AND UTILISATION

15 State Council, Regulations for the Implementation of the Cultural Relics Protection Law of PRC (latest revision 2017), Article 8 & Article 13. A 2003 version in English is available at http://www.sach.gov.cn/art/2007/10/29/art_1034_6941.html

The modern concept of a system for the conservation and management of cultural relics in China was introduced in the early 20th century. Following the fall of the last feudal Qing Dynasty in 1911, it was realised that antiquities were no longer for the enjoyment of the upper classes but were for the benefit of the public (Li 2015). The introduction of western sciences like archaeology also provided academic support for heritage conservation. In 1930 the Government of the Republic of China promulgated the Antiquity Preservation Law, the very first legislation of its kind. Almost half a century later the CRPL – the Cultural Relics Protection Law of the People’s Republic of China – was formally issued in 1982 (just a few years after the Chinese Economic Reform and the “opening-up” in 1978), and was followed by five subsequent revisions. The general principle for cultural relic conservation work was set out in the 2002 CRPL, Article 4: giving priority to the protection of cultural relics, attaching primary importance to their rescue, making *rational use of them* and *tightening control over them*.

In recent years, with the rapid economic and social development in China, some new trends have been emerging in the field of cultural heritage conservation.

Towards holistic conservation

A broader concept of heritage. As compared to the traditional focus on individual or the most important parts of a heritage asset, greater efforts are now being made to protect heritage in an integrated way. In the case of the Great Wall, for example, from 1961 to 1996 eleven individual forts, passes and short stretches of the Great Wall had been designated separately as National CRPUs, but since 2001 the whole of the Great Wall has been designated as a single unified National CRPU and the designation has been extended to include new finds. At the same time more and more new categories of heritage such as industrial heritage, vernacular heritage, 20th century heritage, cultural landscape, heritage canals, and cultural routes have been receiving more and more attention (ICOMOS China 2015).

Integrated conservation of heritage and its setting. One landmark was the issuance of the Xi’an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas in Xi’an, China, by the 15th General Assembly of ICOMOS in October 2005. Another is the policy on Large Archaeological Sites (Dayizhi), which since 2005 has gone beyond the legal identity of CRPUs to cover regional conservation, with wider goals to “improve the lifestyle and quality of life of the people”, and “seek harmonious and sustainable development through regional social benefit and ecological benefits”(SACH 2005).

Combined work on salvage and proactive conservation. Systematic, proactive conservation, including monitoring, has been widened to include not only UNESCO heritage sites but also wider cultural relic management work, as well as giving priority to the safeguarding of heritage. A number of sophisticated monitoring systems are under development for large heritage sites, including the Great Wall.

Reform in Governance

Against the general background of the Chinese government reform of Fang-Guan-Fu, or “Streamlining Administration and Delegating Power, Strengthening Regulation, Improving Government Services”, more and more administrative power, or the approval responsibilities of SACH, are now delegated to local CRBs through a number of revisions of the CRPL. In the 2015 revision, for example, archaeological institutions can retain objects found from excavations with the approval of provincial CRBs, and no longer the SACH.

In parallel with this loosening of control in the approval process, the supervision of implementation and performance is being tightened by central government or, in the case of heritage conservation, by the SACH. A specialised Department of Supervision and Inspection was established within the SACH in 2009, with responsibility for law enforcement and security supervision. Special inspection programmes for the Great Wall were set up by the SACH in 2016 and 2017.

Enhanced appreciation in public service

Increasingly, today’s well-off Chinese public has been demanding that relics be made accessible, and in recent years this has also been promoted by the government, as is well reflected in a State Council document which states: “it is significant to give life to those collections in the museums, heritage on the vast lands, and words in ancient books, for the inheritance of Chinese traditional culture, the satisfaction of public cultural demand, the enhancement of population cohesion, and boosting social and economic development” (State Council 2016).

For example, a new form of heritage interpretation and utilisation, the National Archaeological Site Parks (NASPs) have been officially designated by the SACH. Up to the present a total of 36 NASPs have been announced in 2010, 2013 and 2018. A Guideline for Historic Buildings Open to the Public was also issued by the SACH in 2017 (SACH 2017), in which various forms of accessibility are encouraged to historic buildings occupied by governments, public bodies, enterprises and individuals.

BIBLIOGRAPHICAL REFERENCE

- CACH (2016) , *Tracking on the large archaeological site protection scheme, Beijing*
- Casini L. (2016), *Ereditare il futuro*, Bologna.
- Guzzo P.G. (2003), *Pompei 1998-2003: l’esperienza dell’autonomia*, Milano.
- ICOMOS China (2015), *Principles for the Conservation of Heritage Sites in China*.
- Li J. (2015), *The Study on the Legalization of Cultural Relics Protection in Modern China*, Doctoral Dissertation, Shandong University.

- Ministry of Finance, SACH (2013), *National Key Cultural Relics Conservation Special Subsidiary Fund Management Regulations* (Caijiao No. 116).
- SACH (2003), *Preparation and Approval Measures of National CRPU Conservation Plans* (Wenwubanfa No. 87).
- SACH (2006), *Overall Dayizhi Conservation Plan in the 11th FYP Period* (Wenwubanfa No. 43).
- SACH (2014a), *Qualification Management for Cultural Relics Conservation Project Survey and Design* (Wenwubaofa No.13).
- SACH (2014b), *Conservation Projects Application and Approval Management Regulations for National CRPUs* (on trial) (Wenwubaohan No. 64).
- SACH (2014c), *Qualification Management for Cultural Relics Conservation Project Implementation* (Wenwubaofa No.13.)
- SACH (2016), *Cultural Relics Sector Statistics 2015*, Internal Report.
- SACH (2017), *A Guideline for Historic Buildings Open to the Public* (Trial), Wenwubaofa No.23.
- Settis S. (2002), *Italia S.p.A. L'assalto al patrimonio culturale*, Torino.
- State Council (2016), *Guiding Opinions on the Further Strengthening of Cultural Relics Work* (Guofa No. 17).
- Tocco Sciarelli G. (2017), *Dalla tutela alla valorizzazione di siti e monumenti archeologici: ruolo e funzioni degli organi periferici del Ministero dei Beni e delle Attività Culturali e del Turismo. Norme e buone pratiche*, in *Ingegneria e beni culturali*, edited by S. D'Agostino, Bologna, pp. 633-682.
- Tosco C. (2014), *I beni culturali. Storia, tutela e valorizzazione*, Bologna.
- Traniello P. (2002), *Storia delle biblioteche in Italia. Dall'Unità ad oggi*, Bologna, pp.15-17.
- Wittfogel K. (1959), *Oriental despotism: a comparative study of Total Power*, New Haven.
- Yu B. (2014), "Analysis of Cultural Relics Property Management System Concerning Large Archaeological Sites", in *China Cultural Relics Scientific Research*, 2, pp.26-30/40.
- Zan L., Yu B., Yu J. et al. (2018), *Heritage Sites in Contemporary China - Cultural Policies and Management Practices*, London.

PART 2

**HERITAGE CONSERVATION
AND MANAGEMENT
OF CULTURAL ROUTES
IN EUROPE AND ITALY**

CULTURAL ROUTES AND HERITAGE SYSTEMS AT THE TERRITORIAL SCALE: QUESTIONS OF MANAGEMENT

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Keywords: Cultural routes, UNESCO, world heritage, heritage management, tourism.

ABSTRACT

This paper explores, from a multidisciplinary viewpoint, some of the most important questions relating to the management of heritage systems on the territorial scale, such as historic cultural routes, with specific reference to the vision and approach of UNESCO. In fact UNESCO World Heritage (Batisse, Bolla 2005), which now counts more than 1000 listed sites, is facing a significant transition both in terms of its recognition procedures and of management tools, particularly with regard to the challenges posed by the 2030 Sustainable Development Agenda. Aside from the administrative aspects, which strictly depend on specific national regulations, there are other management issues of which heritage organisations should be aware and that they should be ready to question.

CULTURAL ROUTES AND NEW "SCALES" OF HERITAGE

Various disciplines are exploring the cultural heritage sector and the very concept of heritage, which is clearly evolving over time. This widening interest is indeed proving helpful for understanding the most important questions relating to heritage, and the most suitable approaches to the issues posed by managing it. In the field of economics, for instance, one of the best-known concepts for describing the organisation of cultural productive systems is the term "cultural districts". Normally we use this definition in relation to places where a system of economic activities is clustered in a defined area and where some resources, such as tacit knowledge, trust, and institutions, are shared among its members. These features are in fact also able

and proper to describe many of the new sites that have been recognised as world heritage, in recent years, within the terms of the 1972 UNESCO Convention for the protection of the world cultural and natural heritage (UNESCO 1972). The World Heritage List was adopted in order to protect the so-called "Outstanding Universal Value" of monuments, groups of buildings, and sites. This notion of 'outstanding universal value' is the key central concept of the Convention, and is based on the idea that some cultural and natural heritage sites are, without distinction, of such outstanding and universal importance for 'all the people of the world' (preamble of the Convention) that they must 'be preserved as part of the world heritage of mankind as a whole'. This approach can be seen as closely related, in some ways, to the concept of "cultural district", mainly because they both appear to strongly relate to the concepts of time and space; just as the World Heritage List includes assets that represent a specific culture in a given time and space, the "cultural district" concept is used to consider the assets produced by a specific material culture, also delimited within a specific time and space. In that sense many Italian world heritage sites can be seen as significant: they include the Caltagirone district (the Baroque towns of Val di Noto for its tradition of ceramics manufacturing), the Murano district (Venice and its lagoon, for its production of Murano Glass, Naples (for the "Presepe" art of San Gregorio Armeno), the Val d'Orcia, the Cinque Terre, or the Vineyards of Piedmont for their traditional wine production (Bertacchini et al. 2009).

Since 1972 the original meaning of "heritage" has changed considerably and since the early 1980s has extended to include intangible expressions (as defined in the 2003 Convention for the safeguarding of intangible heritage) such as popular festivities, spiritual customs, holy rites, and intellectual "material" assets (Araoz 2010). Clearly, therefore, the definition of cultural heritage does not end with monuments and collections of objects. It also includes traditions or living expressions inherited from ancestors and passed on to descendants such as those that come from oral traditions or the knowledge, practices, and skills that were necessary to produce traditional crafts.

Along with the so-called serial sites (Fig. 1) that cross the boundaries of individual territories and nations, such as the "cultural routes" (introduced in 1993) and the "cultural landscapes" (introduced in 1994), these new categories are just some thematic examples of how UNESCO has been continuing to change its interpretation and tools as it attempts to adapt to a more credible vision of contemporary cultural heritage. These categories reflect and clearly show that in the contemporary view, cultural heritage is considered as living heritage, and its expressions, such as those mentioned, are in fact invaluable because they are manifestations not only of physical components, but also of the dynamic communities associated with them; thus, they constitute a driving force in cultural diversity. In that context, cultural phenomena (for instance, the pilgrimage processions along the Route of Santiago de Compostela, Fig. 2) are constantly recreated by communities and groups of people, interacting with history. Such dynamics also have the effect of giving local communities a sense

of identity and continuity. The “cultural route” concept is open, dynamic, evocative, and offers a privileged framework within which mutual understanding and a plural approach to history and culture can operate. It is based on population movements, encounters and dialogue, cultural exchanges and cross-fertilisation that take place in both space and time. Cultural routes are based on an array of significant points and tangible elements that attest to the significance of the route itself. They necessarily include a number of material elements and objects, linked to other values of an intangible nature by the connecting thread of a civilising process whose importance is decisive at a given time in history, for a particular society or group.



Fig. 1 Pearling in Bahrain, consisting of 5 serial sites that recount the social and economic history of pearling in Bahrain, from underwater “fishing”, to the markets in the urban district of Muharraq Island (photo courtesy of the Arabian Regional Centre for World Heritage)

Taking account of such considerations, in recent times much of the scientific community has been proposing a new definition for heritage: not only as the product of a determined society and culture, but also as a generator of culture. So far as its protection is concerned, UNESCO affirms (see the Convention on cultural diversity, 2005) that placing culture at the heart of development policy constitutes an essential investment in the world’s future and a pre-condition to successful globalisation processes that take into account the principles of cultural diversity.



Fig. 2 The Santiago de Compostela pilgrimage route. This route, probably the best-known in the world, was added to the UNESCO World Heritage List in 1993

QUESTIONS OF MANAGEMENT

As has been briefly argued, heritage systems on the territorial scale include, by definition, different components that possess cultural significance and meaning; for that reason their management necessarily demands an integrated approach that recognises both their interdependencies and their distinctive characteristics. Serial sites and cultural routes (inscribed or under proposal) such as the “Camino de Santiago”, the “Main Andean Road” (Fig. 3), the “Silk Road”, the “Viking Routes”, the “Teutonic route for the Crusades”, or the “Venetian Trade Route” are geographical representations of cultural heritages that cross national borders but that still define, or are used to identify, a specific cultural community. The nature of such systems is open, dynamic, and evocative, and offers a privileged framework within which mutual understanding and a plural approach to history and culture can operate: a framework based on population movement, encounters and dialogue, cultural exchanges, and cross-fertilisation that all take place in both space and time.



Fig. 3 The Main Andean Road (the *Qhapaq Ñan*): a network of roads over 23.000 km in length from Argentina to Peru, connecting various productive, administrative and ceremonial centres that were constructed over a period of more than 2000 years

The people who walked the pilgrimage routes shared a sense of belonging to collective values that did not depend on their nationalities but was based on their participation in a ritual that had been going on for centuries. The cities and villages that were built along the Silk Road symbolise, in their architecture, the passage of different cultures that create a specific style which is found all the way along the road. In this sense, “narrative” sites of that kind (sites narrating an historical period/activity/complex of events associated with different places) are examples of cultural commons (Buzio, Re 2012); the number of pilgrims or merchants has no limitation but it strongly influences the creation and transmission of the culture itself. In the case of cultural landscapes this is perhaps even more significant when we consider their manufacturing characteristics. Like the concept of space, the very concept of landscape derives from remote theories whose intention is to provide an interpretation for the complex features of a given territory. Over many years a culture creates specific relationships with nature, giving origin to places that possess specific

characteristics, and becoming the mirror of the society that created them. Having debated these matters since the 1980s, in 1992 the Committee of the WHC adopted three categories of cultural landscape (clearly defined, organically evolved, and associative cultural landscapes), in order to reveal and sustain the great diversity of the interactions between humans and their environment, and to protect living traditional cultures (Thorsell 2003).

CULTURE AND TOURISM

In relation to heritage management, one of the most important questions relates, of course, to the use of places for tourism, or their tourism potential. This becomes particularly significant when it affects large territories like landscapes or routes. Undoubtedly, a key issue consists of the challenges that are posed by enhancing the appreciation of heritage in relation to its promotion, its visibility, and its tourist flows as these affect the ordinary life of the local communities, and the capacity for safeguarding local cultural values and their authenticity.

The authentic and genuine values of a heritage may in fact be compromised by the process of making it more amenable to the tastes of consumers. There are already many examples of places where such changes have already taken place or are in the process of taking place, and where heritage (whether tangible or intangible) may become standardised and homogenised as the local community makes concerted efforts to present this heritage in a way that will be more easy to assimilate for tourists (Pedersen 2002).

When we come to the case of rituals, ceremonies, or other community-based performance events, we can easily see how the more a festival is exploited by marketing it, the more it risks being compromised in its authenticity, and the greater the risk inherent in the fragile equilibrium between traditions and the contemporary needs of local communities.

Similar to many other events inscribed on the UNESCO Intangible Heritage List, the Dragon Boat Festival in China, for example, consists of ceremonies, dances, and performances (in this case on the river), and is exposed to a high risk of compromise should too many people begin to go there in uncontrolled ways, exactly as in Venice, Lijiang, or Quito, which because of the massive tourist flows are losing, day by day, the authentic value they hold for their inhabitants (Di Giovine 2009).

In relation to this issue Mansfeld and Jonas have studied rural tourism in a number of *kibbutzim* in northern Israel. They argue that there exists a socio-cultural load capacity, representing the resistance of a local population to the changes introduced by incoming tourists. When the maximum load capacity is exceeded the local population sees tourism as damaging rather than beneficial and they begin to react against it, thereby not only compromising the authentic value of that place, but also its significance as an experience for visitors (Mansfeld, Jonas 2006).

At the same time we must remember that if the cultural significance of heritage systems, such as those mentioned here, is to be complete, it necessarily requires a presence of people who use them; the presence of people is an essential condition for their survival and appreciation in modern life. Empty heritage sites or abandoned traditions risk losing their value in the perception of people, thereby becoming neglected and, in the long run, disappearing. Placing people at the centre of heritage management implies that each management tool should be based on needs expressed by those local communities themselves. For local development therefore, proposals for cultural projects, and for their implementation, should be based on full understanding of local needs, resources, and economic dynamics. Again, this is a radically different perspective from basing management strategies and decisions on the values of a place alone. Values belong to a place, but needs are expressed by its people; values imply a preferential reference to the past, whilst needs belong to the contemporary.

CONNECTING PHYSICAL AND INTANGIBLE HERITAGE COMPONENTS

With regard to the foregoing considerations on the multi-dimensional nature of heritage expressions, an interesting point of view is provided by the anthropological theory of the “cultural area” that emerged in Germany and the U.S. at the turn of the 20th century. In this theory a “cultural area” is defined as a geographical space characterised by shared cultural features and including integrated cultural expressions and assets. This concept has frequently been applied to the concept of cultural heritage in an attempt to revise it, and may also offer many interesting contemporary suggestions as to what a management plan ought to be - as a tool that UNESCO has required since 2002. In that context the concept of “cultural area” can be associated with the theory of the “cultural economy” which, as has been mentioned, for many years has been emphasising the importance of cultural communities and districts (Buzio, Re 2010). In the field of cultural heritage, a cultural area may also be associated with a buffer zone, not only as a protective tool for a site, but also as a “place” in which to integrate the heritage with its surrounding territory and the community living there, and crossing, in a sense, the boundaries of the core zone considered as an “island of excellence” (and complying with the principles affirmed by the EU Landscape Convention) (Grefe 2010).

Other sites inscribed on both lists (tangible and intangible heritage) seem to go in this direction, as in the case of Jemaa el-Fna Square in Morocco (inscribed on the intangible list in 2008), a cultural space that features a unique concentration of traditions such as storytelling, healing, and various forms of entertainment as well as commercial activities (Fig. 4), as a complement to the Medina of Marrakesh (inscribed on the tangible list in 1985). Similar considerations could clearly also be made for all the mercantile routes, such as the Silk Road, where an alternation of

paths with villages and local markets is always present. They can also be made for the Rice Terraces of the Philippines (Tangible 1995) which includes the inscription (Intangible 2001) of the Hudhud Chants of the Ifugao people, who work on the terraces. There is an intimate inter-relatedness between the Terraces and the Hudhud Chants, which are sung during the sowing season and the rice harvest, that exemplifies a unique interdependence between a World Heritage site and a Masterpiece.



Fig. 4 The Medina of Marrakesh and Jemaa el-Fna Square. Dating from the fourteenth century, the triangular Jemaa el-Fna Square has become the symbol of Marrakesh and has been protected since 1922 as part of Morocco's artistic heritage. It features a unique concentration of traditions such as storytelling, healing, and various forms of entertainment as well as commercial activities

The knowledge and skills handed down in that place from generation to generation, together with a delicate social balance, have helped to create a landscape, along with musical and other cultural traditions that testify to the harmony between a people and its environment. But now these terraces and the chants are both endangered; local experts and practitioners are claiming that coordinated protective action is required and that neither the terraces nor the chants can be safeguarded in isolation from each other.

In conclusion: for an effective approach to the management of such territorial systems, a number of questions have been opened and need to be addressed. What happens, for instance, to heritage boundaries? What are the implications for heritage, in an age of trans-national migrations? And assuming that there cannot be authentic conservation without the production of new values, what meaning can be attributed to conservation and safeguarding?

BIBLIOGRAPHICAL REFERENCES

- Araoz G. (2010), *Scoping the Road Ahead for ICOMOS: protection of intangible-based heritage categories*, presentation at the ICOMOS International Committee meeting on Conservation's theories and philosophy, Prague.
- Batisse M., Bolla G. (2005), *The Invention of 'World Heritage'*, Club Histoire (History Papers 2) Paris, Association des Anciens Fonctionnaires de l'UNESCO (AA-FU).
- Bertacchini E. et al. (2009), *Enhancing the valorisation of UNESCO World Heritage Sites: a Pigouvian Approach*, working paper CSS EBLA, Torino.
- Buzio A., Re A. (2010), "Creativity and cultures: Towards a 6th C for UNESCO World Heritage policies?", in *REM Research on Education and Media 27/2*, pp. 107-120.
- Buzio A., Re A. (2012), *Cultural Commons and new concepts behind UNESCO world heritage sites recognition and management*, in *Cultural Commons* edited by E. Bertacchini et al., Cheltenham, pp. 178-193.
- Di Giovine M. A. (2009), *The Heritage-Scape: UNESCO, world heritage and tourism*, Plymouth.
- Greffe X. (2010), *Urban Cultural Landscapes: An Economic Approach*, working paper for CSS EBLA, 01, Torino.
- ICOMOS (2004), *The World Heritage List: Filling the Gap – An Action Plan for the Future*, Paris.
- Labadi S. (2007), "Representations of the nation and cultural diversity in discourses on World Heritage", in *Journal of Social Archaeology 7/2*, pp.147-170.
- Mansfeld Y., Jonas A. (2006), "Evaluating the socio cultural carrying capacity of rural tourism communities: a 'value stretch' approach", in *Tijdschrift voor Economische en Sociale Geografie, 97/5*, pp. 581–599.
- Pedersen A. (2002), *Managing Tourism at World Heritage Sites. World Heritage a Practical Manual for World Heritage Site Managers*, UNDP, UNESCO.
- Thorsell J. (2003), *World Heritage Convention: Effectiveness 1992–2002 and Lessons for Governance*, Gland, Switzerland/Gatineau, Quebec, IUCN/Parks Canada.
- UNESCO (1972) Convention Concerning the Protection of the World Cultural and Natural Heritage, URL (consulted February 2007): <http://whc.unesco.org/archive/convention-en.pdf>

CULTURAL ITINERARIES AND ROMAN ROUTES: CHALLENGES AND OPPORTUNITIES FOR SUSTAINABLE LOCAL DEVELOPMENT AND SOCIAL PARTECIPATION

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Keywords: Roman routes, sustainable local development, Tabula Peutingeriana, slow tourism, Mediterranean

ABSTRACT

More and more, development is being framed as a concept that is associated with the idea of territorial profit as part of a sustainable and desirable future in which the construction of contemporary heritage, alongside the fruition of traditional heritage, can represent a political, economic, social and cultural strategy both locally and internationally, because of its ability to strengthen the identity and self-reliance of a local system. This brings to mind the idea of a route passing through a territory as a linear local system that can be scaled up from the local to the international scale. In fact, it is particularly restrictive and simplistic to define ancient roads in merely economic terms as “infrastructure”, including ancient roads that were once associated with political contexts that vanished centuries ago, such as the Via Appia, the first of the great Roman roads. The Via Appia got its name not from a function or a destination, but from the man who commissioned its construction (the Censor Appius Claudius Caecus, 312 BC). Known as the *Regina Viarum*, “the Queen of all Roads”, today the Via Appia is once again at the centre of attention as a consequence not only of so-called slow tourism, but also and more especially in relation to the policies of the Council of Europe and the programme of the Italian Ministry for Cultural Heritage (MiBACT) which is aimed at rediscovering Italy’s culture, history, and landscape routes and establishing good practice for territorial sustainability. The most important questions for our present research are to ask whether the cultural and spiritual values of these itineraries, and their economic significance in terms

of promoting a territory and seeing the opportunities for its profitability, mean that they can also be considered as a resource. Is it correcting to think of them as strategic local systems? Finally, is it appropriate, in our own time, to see Roman roads as potential cultural itineraries that traverse the whole geographical area of the ancient Roman Empire? This paper attempts to address those questions, in the awareness that these routes are still living structures of the antique Roman Empire, embracing an area of 4.4 million square kilometres that extends from Europe to the Mediterranean Africa and the Middle East and promotes a real sustainable heritage.

THE GEO-HISTORICAL NETWORK OF THE ROMAN ROUTES, IN THE CONTEMPORARY FRAME

Ever since Roman times the ancient routes taken by soldiers, pilgrims, merchants and wanderers have been fundamental elements of Europe's cultural heritage. Over the past few decades they have become the object of various Council of Europe initiatives aimed at identifying them and enhancing their appreciation. When the European Institute of Cultural Routes (EICR) celebrated its thirtieth anniversary in Lucca in September 2017, it acknowledged that these routes can be seen as effective creative tools to boost sustainable local development (Cultural routes 2017a and 2017b): a process that had begun when the Commission of the Council of Europe visited Santiago de Compostela in 1987 and officially recognised it as a pilgrimage route that had been travelled by thousands of people from eastern, northern, and southern Europe ever since the beginning of the 11th century, on their way to visit the shrine of Saint James the Apostle. The increasing numbers of those pilgrims had come to be seen as a strong indicator of the existence of a European spirit that first became established in the Middle Ages, and of the humanism that led to the Renaissance. However, in later times many of these pilgrimage routes sunk into oblivion and it was not until our own time that they were rediscovered, about thirty years ago, as a source of inspiration for new cultural itineraries that traverse the whole European continent. Along with these pilgrimage routes, the European Institute of Cultural Itineraries (EICI 2017) also took other routes into consideration (as thematic routes), such as the Roman Emperors and Danube Wine Route, that had been generated by strategic creative activity. Having been part of the European collective imagination since the 18th century, at the beginning of the 21st century a great many projects were now planned for these Roman routes, of which one was the Roman Itineraries initiative (ROMIT 2003/2006), funded by the European Union. The MESA-ROMIT project, which can be considered a spinoff from ROMIT, was presented by the author at the second 2006 workshop of the UNESCO-UNITWIN Network "Culture, Tourism and Development" (Dallari 2006), and again in Istanbul at the 5th International Congress on "Science and Technology for the Safeguard of Cultural Heritage in the Mediterranean Basin" (Dallari 2011).

Over the past ten years there have been many case studies dealing with the Roman roads and there has been increased participation by public and private social institutions, as well as by public policy-making and research (in Italy and elsewhere); increasingly, the Roman roads have been considered in a new way as local linear systems for territorial development, and as a model for local developmental and inter-regional cooperation within the ancient boundaries of the Roman Empire.

Is this a strategical potentiality (Dallari, Mariotti 2005; Candela et al. 2005) for a sustainable local development in the European region and beyond? Such hypothesis lays at the foundations of this contribution, which recognizes the cultural and spiritual value of the routes, as well as their economic potential to the benefit of territorial promotion and profit.

This paper addresses the questions as to whether, today, these Roman routes can indeed be seen as a resource not only in terms of their cultural and spiritual value but also in terms of their importance for the economic activity in the territories through which they pass, i.e. whether in accordance with the most recent scientific literature and projects, they can now be seen as strategic local systems that possess cultural, territorial and capacity-building potential.

The scientific literature

Contemporary culture can now reinterpret the significance of the ancient pilgrimage routes in Europe by considering their historical existence, and their rich heritage, as assets and resources. These have already been the object of various reflections (Almatourism 2017, 8/6 and 8/16; Almatourism 2013, 4/7-8; Zabbini 2012) which have also considered them in terms of their potential for implementing territorial linear systems that would also be available to an international scenario. This present paper is based on one such hypothesis (Dallari, Mariotti 2005; Candela et al. 2005): that they do indeed offer strategic potential for sustainable local development (not only in the European region but even beyond) which acknowledges not only their cultural and spiritual value but also their economic potential in terms of the benefits they can bring to territorial promotion and economic profit. In other words, these itineraries may attract the activities that will characterise a new cultural, sustainable, inclusive way of life that can begin from tourism. The revival of pilgrimage, for instance, has been generating an emotional impact that seems to mimic religious experience as human life rediscovers the slowness of time - the same concept that inspired Slow Tourism (Fullagar, Markwell et al. 2012) and Slow Movement (Calzati, De Salvo 2012). Such considerations aside, these new types of experiential *on the road* tourism are attracting increasing flows that may as yet only be definable as a niche phenomenon (Xinhua et al. 2005; Novelli 2005; Dinis 2011) but are becoming more and more important in the general awareness worldwide. On the other hand, however, the need to enhance appreciation of them is either being underestimated or has been neglecting the remarkable heritage of information that is to be found in

European archives. So, the need to integrate scientific knowledge as *cool authenticity* with the steadily increasing appreciation of these itineraries by local communities and travelling visitors alike (Addison 2003; Rhodes, Donnelly-Cox 2008), which was defined twenty years ago by T. Selwin (1996) as *hot authenticity* and was validated by Cohen & Cohen (2012), emerges as a serious matter for consideration that may require a resolution if some social disputes are to be resolved.

It is worth remembering that for most of its length, the pilgrimage route to Santiago de Compostela is of Roman origin and passes through the former Roman colony of *Emerita Augusta* (Mérida) and the Roman city of *Asturica Augusta* (Astorga); similarly all the pilgrimage routes to Rome, the *Vie Romee*, followed the ancient system of Roman routes from northern and eastern Europe towards Rome, which ever since the third and fourth centuries had been the most important religious destination for pilgrims from France. These *Vie Romee* include the well-known Via Francigena (certified as a Cultural Route of the Council of Europe since 1994), the Via Romea Germanica, and the Romea Strata Way.

The ancient Romans built their roads to last and at least eight of them still follow the same routes and serve a similar purpose today; one is the Via Appia, begun in 312 BC on the orders of Censor Appius Claudius¹ and connecting Rome to Capua (later extended to Brindisi). In most cases these roads were planned to make military movements easier and more efficient, but they also served various commercial and political purposes (Davies et al. 2002) and were a means of asserting Rome's hegemony and dominance over its subject peoples.

The Via Appia (Pratilli 1745; Cancellieri 1990; Arnoldus-Huyzendveld 2004) was the first Roman road designed for strength. It began construction in 312 BC as a major military supply route capable of supporting every type of transport in all weathers, and was paved with large, perfectly interlocking polished stones laid on a bed of crushed stone, which ensured it was well sealed and well drained: a revolutionary technique that the Romans then used to extend their enormous road network during the Republic and the Empire. The Via Appia, the Queen of all Roads had a footpath

1 The other seven are the Via Salaria, a very ancient Roman road that already existed in the 4th century BC and that owes its name to the transportation of salt from the Adriatic to Rome; the Via Cassia, a Roman consular road that led from Rome to Luni in northern Etruria; the Via Aurelia, an ancient Roman road whose construction begun in the 2nd century BC and connected Rome to Arelate (Arles) along the Tyrrhenian coast by way of Civitavecchia, Pisa, and Genoa; the Via Flaminia, a Roman route connecting Rome and Ariminum (Rimini), built in 220 BC by Gaius Flaminius during his censorship; the Via Postojna, built by Consul Postumius Albinus in 148 BC and connecting Genoa to Concordia Sagittaria by way of Piacenza, Cremona, Verona, and Vicenza; the Via Claudia Augusta Altinate, an ancient Roman road leading from Altino to the Danube; and the Via Emilia, a Roman road built in 187 BC on the orders of Consul Marcus Aemilius Lepidus between Rimini and Piacenza, to connect the northern territories with the Via Flaminia.

on both sides and a carriageway about 4.10 metres wide to permit two-way traffic: it was almost perfectly straight, with a stone marker placed at each mile. After the fall of the Empire it was left in abandonment and neglect for thirteen centuries until the idea emerged, in the Napoleonic period, of creating an extensive archaeological park taking in the whole extent of the road from Trajan's Column to the Castelli Romani; but it was not until 1931 that the idea of incorporating the Via Appia into a "Grande Parco" surrounded by a protective "buffer zone" was included in the new Rome master plan. At the end of the 1950s a long battle by the Italia Nostra association to safeguard the Via Appia attracted considerable public interest, although in the 1960s a new landscape protection plans only provided for a strip of public green space a few metres wide on either side of the road. In 1988 the Regional Government of Lazio established the Via Appia as a Regional Park, and in 2017 MiBACT identified it as the very important southern part of the Via Francigena. Both the northern and southern parts can in fact be considered as a single route used by pilgrims who arrived in Rome from northern, eastern, and western Europe and then carried on to Jerusalem by taking the Appia Antica through the regions of Lazio, Campania, Basilicata, and Apulia as far as the port of Brindisi (Caucci 2014). So even though the formerly Roman roads (particularly the *Vie Francigene* or even better, the whole halo of the *Vie Romee* as defined by their common destination, Rome) have still not been studied or considered as social heritage (Waterton et al. 2006), it is in that scenario that they are now being proposed as routes of new cultural attraction for tourists.

Finally from a scientific viewpoint, as a truly fascinating resource for study (Levi, Levi 1967; Paola 1998; Bargnesi 1998; Magini 2003; Prontera 2003; Calzolari 2003; Lachin, Rosada 2003; Munzi, Zennati 2004; Staffa 2005; Albu 2008; Morandini 2013) we have the most important map of the Roman Empire, the *Tabula Peutingeriana*², (Omnes Viae 2011).

To conclude, it can be said that whilst the scientific literature about these routes is abundant, as yet there has been very little sustainable, multidisciplinary, theoretical, applied research into their archaeological, historical, geographical, social, economic, and tourism aspects.

THE ROMAN ITINERARIES IN EUROPE AND THE MEDITERRANEAN BASIN: OLD AND NEW PROJECTS

For nearly half a century there has been increasing support from various international organisations for the tangible and intangible cultural heritage that exists

2 *Tabula Peutingeriana* is a unique document: an illustrated road map of antiquity (of 4th century AD) designed probably in 13th century. It is a parchment scroll of 700 x 34 cm now conserved in the National Library of Vienna.

along these ancient routes, particularly where they pass through older cities and smaller places. UNESCO, the Council of Europe, the European Union, Europa Nostra, and others have so successfully been reinforcing public awareness of this heritage, and encouraging social participation in it, that the EU proclaimed 2018 as the European Year of Cultural Heritage. Over the past thirty years the Council of Europe's European Institute of Cultural Routes has recognised 31 itineraries as European routes, of which 22 are Roman routes (Cultural routes 2017a) that date back to the time of the Roman Republic and the Empire. This recognition has been very beneficial (in most cases) to the local communities through which the itineraries pass, and has extended the European region into other Mediterranean and Asian contexts. As the Grand Tour first showed, the interest in archaeology taken by travelling visitors (Roman archaeology in particular) has never ceased to increase, and is a typical example of the new market segments that today are often referred to as "tourism motivation" in opposition to "generic tourism".

Today the shared goal for the preservation and sustainable management of Roman archaeological complexes is to encourage innovative integrated strategies that incorporate them into local development policies. Referring to the successful policies of the EICI, UNESCO has already inscribed eight itineraries on its list of tangible heritage, whilst the Europa Nostra awards for Cultural Heritage have helped to make them more widely known. So, although the ROMIT project³ has not produced any significant impact for the European Union, 100,000 km of Roman routes have been recognised.

Two important and meaningful factors were taken into account in the ROMIT project: firstly, heritage as an important element for social identification, and as an area for various personal interests that combines intangible elements (traditions, values, and beliefs) and tangible elements (works of art, craft, buildings and landscape); and secondly, heritage that can be transformed into specific tourism products. The results that ROMIT was expected to deliver included: achieving a shared developmental model, based on transnational jurisdictional and economic studies and surveys for archaeological sites, that would be easy to replicate; developing a shared European catalogue entry based on a transnational and multi-lingual inventory, selecting and aggregating information and documentation on amphitheatres, arenas, buildings, roads, walls etc. of Roman origin, including those that are less known or completely unknown; designing a cultural route for the Roman archaeological sites, to be managed via a website; developing a separate website to promote and manage a dedicated cultural route based graphically on the *Tabula Peutingeriana*; designing a European point of observation from which to oversee the activities of travelling visitors interested in historic and cultural heritage; and developing training

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3 This project financed by Europe, was approved by Steering Committee of the Interreg III-B CADSES (2003-2006). It reached high level of research in the economic, social field and spatial design among five countries (Italy, Germany, Austria, Bulgaria, and Greece).

materials for public officials involved in urban and land development, for cultural heritage managers and operators, and for the staff of tourism promotion agencies.



Fig. 1 The Adriatic ring of ROMIT project. (Map elaborated by the author)

In that context, a number of linear and circular Peutingerman itineraries were identified based on a linear and circular model (Fig.1 and 2)⁴, but no European governance has ever been organised and numerous online searches are no longer visible! Nevertheless, the author’s participation in that project was a stimulus for applying the same perspective to Mediterranean Africa and the Middle East (MESA - ROMIT), a very poor region that has had to face a geopolitical and territorial crisis particularly in the past ten years, beginning from Tunisia (December 2010) and the Arab Spring, and then the breakout of civil war in North Africa and the Middle East. The scientific report (Dallari 2006) for the MESA - ROMIT project was presented at the second workshop of the UNESCO/UNITWIN “Culture, Tourism, Development” network at

4 The following itineraries have been designed: the continental ring (Rimini, Nuremberg, Wien, Sofia, Patras, Rimini); the Adriatic ring (Rimini, Bologna, Aquileia/Venice, Trieste, Split, Tirana, Patras, Brindisi, Bari, Rimini); the Adriatic tour (Rimini, Venice, Treviso, Graz, and Vienna); the continental tour (Rimini, Verona, Trento, Munich, Nuremberg); the middle-European tour (Nuremberg, Regensburg, Linz, Vienna); the Balkan tour (Vienna, Budapest, Belgrade, Nis, Sofia); the Aegean tour (Sofia, Patras, Thessaloniki).

Gréoux-les-Bains (France 2006) and offered a new perspective between industrialisation and tourism. Its goals were to put in place a completely new process of economic and political recomposition: to open the borders and reconstitute the territory of the Maghreb, Egypt, and Mashrek society both locally and at the Mediterranean scale; to enhance the protection and fruition of Roman heritage as the most significant example of ancient architecture and human transformation of the cultural landscape; and to facilitate “cooperation” by organising meetings and conferences involving public and private actors of the MESA-ROMIT regions. But neither the first Gréoux-les-Bains report (Dallari 2006) nor the second report presented at Istanbul (Dallari 2011) had any follow-up; perhaps the project had come too soon but above all, perhaps, it was a top-down project based on a Eurocentric vision.



Fig. 2 The Adriatic tour of ROMIT project. (Map elaborated by the author)

Since 2017 a PhD thesis entitled “Elaboration of a Cultural Route for the enhancement of the Algerian Thermal heritage” has been in progress at the Architecture and Heritage Workshop of the Algiers Polytechnic School of Architecture and Urbanism, to support a more bottom-up type of national policy in the form of a Master Plan for Tourism Development (SDAT 2030), which considers various cultural routes and the new economic and tourism (thermalism) potential of the Roman baths shown on the *Tabula Peutingeriana* (Morandini 2013).

Finally, the Italian Strategic Tourism Plan (PST 2017) and the Pathways Tourism Plan (PST 2017), both currently under development, demonstrate the commitment

of MiBACT. Of the 72 Pathways under consideration (MiBACT 2017c), two are of particular interest to the Ministry: the Via Appia and the southern part of the Via Francigena. So, there is an increasingly shared belief that the *Viae Romanae*, as “territorial veins”, are both a challenge and an opportunity!

THE LOCAL DIMENSION IN SEARCH OF THE INTERNATIONAL DIMENSION; SUPRANATIONAL ENTITIES IN SEARCH OF THE LOCAL DIMENSION. TERRITORIAL DISTRICTS AND TERRITORIAL LOCAL SYSTEMS: BOTTOM-UP AND TOP-DOWN POLICIES

At a glance, the network of Roman roads (and the other ancient routes) seems to be a geographically diffuse sustainable phenomenon: an important territorial resource for which a “*mise en développement/tourisme*” of rural areas can be envisaged in which identity values and cultural heritage, as expressions of a shared historical process, are still present in small villages and in ancient European, Mediterranean, and Middle East centres. This territorial diversity, which can also be seen as a polycentric phenomenon, could become the glue holding together a renewed territorial cohesion and confirming its role at the local level (Dematteis, Rivolin 2004). Seen in that way these ancient routes, particularly those of Roman Empire origin, may represent a starting point for settling disputes and recomposing fragmentations as part of a territorial system of sustainable local development (Becattini 1987; Dematteis 2003; Dallari 2007) and internationalisation.

In the academic sphere the dichotomy between the local and the global, and between local and international development, was overcome long ago; in the late 20th century the case of the Italian industrial districts (Becattini 1987)⁵ and the territorial local systems (Dematteis, Governa 2005; Dallari 2011) were part of an important debate about Italy’s national economy, and provided support for the significance of local development (Bourdin 2000). That “academic discovery” of the industrial districts, a phenomenon that originated and developed spontaneously as part of a bottom-up territorial process, almost exclusively in the so-called NEC (North-East-Central Italy) area (Fuà 1983) came about in the early 1990s. Later, public agencies implemented new policies to extend the same development across socio-territorial systems that encompassed their whole territories, by means of the so-called “productive local systems”, and supported them with public subsidies. But that strategy was not a success and the failure of those processes, which were led by national but mainly regional policies, emphasised the weaknesses of a top-down territorialising approach (Sabatier 1986; Talen 2000; Albrechts 2004; Albrechts et al. 2003;

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 5 Giacomo Becattini defines the industrial district as a socio-territorial entity where a community of people and a group of industrial activities co-exist within a delimited territory with specific natural and historical features (1987, p. 52).

Allmendinger, Haughton, 2010). Later, at the beginning of the 21st century, the enactment of Italian Law no.135 of March 29, 2001 (Dallari, Mariotti 2005; Dallari 2007 and 2011) provided a tool that took as its model the very few Italian tourist districts that had originated spontaneously, and encouraged the development and dissemination of a local tourism system.

When that model is adopted by a local district or system, the local cultural itineraries can be interpreted in accordance with it, and include a strongly international contamination that develops locally in a natural way but which, thanks to the activities of supranational institutions like the Council of Europe, also integrate it with an international context. In these cases the aim is to highlight territorial identities that are embodied in sustainable local systems across a territory (as in the case of the pilgrimages on Roman routes) in the form of a Supranational Local System (SLoS or *Sistema Locale Sovranazionale*) organised in a more or less emphatic way as a continuous territorial system (Reed & Bruyneel, 2010) within a macro-scale vision that tourists perceive as being "off the beaten track" (Maitland, Newman 2014; Condevaux, Djament-Tran et al. 2016).

With the Convention of Faro (2005), the Council of Europe emphasised the importance of placing individual and human values at the core of an enlarged and interdisciplinary idea of cultural heritage in which local communities, in the inclusive sense of "involvement and engagement" (Ferlazzo 2011) see both local players and outsiders playing a role in managing cultural heritage, thereby achieving a form of social participation that is local and international at the same time.

Undoubtedly the cultural itineraries of the Council of Europe have been able to demonstrate, via a journey through space and time that has continued since 1987, that the foundation for a continent-wide European cultural heritage and identity is the heritage of the individual European countries and their cultures. In fact, it is those itineraries that have put into practice the fundamental values of the Council of Europe: human rights, cultural democracy, cultural diversity and identity, intercultural dialogue, exchange, and mutual enrichment beyond boundaries and centuries. New policies and action have been implemented that foster different forms of cooperation between countries, and are evidence of a particular interest in strengthening cultural cooperation, territorial sustainable development, and social cohesion, leveraged on symbols like unity, history, culture and European values, and rediscovering, in the contemporary context, destinations that had previously been marginalised (Accord Partiel Élargi on Cultural Itineraries 2010).

TOWARDS AN INCREASING OPERABILITY: SOCIAL PARTECIPATION BY LOCAL COMMUNITIES AND TRAVELLING VISITORS

The historic routes, particularly the system of imperial Roman routes that the *Tabula Peutingeriana* depicts (Fig.3), are a valuable resource not only because of

participation, in relation to the major and secondary destinations in the European and Mediterranean network which in their *cool authenticity* are weak, forgotten, and neglected. Supporting this scenario is a way of breathing new life into a European and Mediterranean identity that is now based on geopolitical awareness.

Thirty years after the first EICRs European route was established, we are now in a position to confirm the strategic potential (Azzari, Dallari 2018) of sustainable local development, which in effect is a governance of rescaling (Swyngedouw 2004; Brenner, Bialek et al. 2000; Baldersheim, Rose 2010; Reed, Bruyneel 2010), i.e. up-scaling from the local to the international whilst also downscaling from the global to the local. Hence the added potential of the European and Mediterranean identity as a territorial marketing strategy that supports that type of dynamic geographical situatedness.

Now that the Via Appia Antica has rediscovered its own situatedness within a renewed debate that is taking place at the regional scale, but in an international context, it provides us with a most interesting case study and reaffirms that there is an increasingly deep relationship between the local/global and the reticular dimension: a new key for taking a creative approach to sustainability.

BIBLIOGRAPHICAL REFERENCES

- Addison R. M. (2003), "Performance technology landscape", in *Performance Improvement*, 42/2, pp. 13-15.
- Albrechts L. (2004), "Strategic (spatial) planning re-examined", in *Environment and Planning B: Planning and design*, 31/5, pp. 743-758.
- Albrechts L., Healey P., Kunzmann, K. R. (2003), "Strategic spatial planning and regional governance in Europe", in *Journal of the American Planning Association*, 69/2, pp. 113-129.
- Albu, E. (2008), "Rethinking the Peutinger Map", in *Cartography in Antiquity and the Middle Ages*, pp. 111-120.
- Allmendinger P., Haughton G. (2010), "Spatial planning, devolution, and new planning spaces", in *Environment and Planning C: Politics and Space*, 28/5, pp. 803-818.
- Arnoldus-Huyzendveld A. (2004), *Centocelle: Roma SDO le indagini archeologiche (Vol. 2)*, Soveria Mannelli.
- Azzari M., Dallari F. (2018), *Le Vie Romee dell'Europa e del Mediterraneo di viandanti, pellegrini e mercanti. Le strade dell'identità europea nelle pratiche contemporanee*, in *Atti del XXXII Congresso Nazionale di Geografia "L'apporto della geografia tra rivoluzione e riforme. N.16: Geografie variabili nel quadro europeo e mediterraneo degli itinerari culturali. Rivoluzioni (trans)disciplinari, metodologie di analisi e politiche territoriali su viaggi e cammini"*, edited by F. Salvatori, Roma, pp. 4-13.

- Baldersheim H., Rose L. E. (2010), "Territorial choice: Rescaling governance in European states", in *Territorial choice*, 3, pp. 1-20.
- Bargnesi R. (1998), "Il bacino del Po nella Tabula Peutingeriana", in *Syngraphé*, 1, pp. 143-154.
- Becattini G. ed. (1987), *Mercato e forze locali: il distretto industriale*, Bologna.
- Bourdin A. (2000), *La question locale*, Paris.
- Brenner N., Bialek W., Van Steveninck R. D. R. (2000), "Adaptive rescaling maximizes information transmission" in *Neuron*, 26/3, pp. 695-702.
- Calzati V., De Salvo P. eds. (2012), *Le strategie per una valorizzazione sostenibile del territorio: il valore della lentezza, della qualità e dell'identità per il turismo del futuro* (Vol. 31), Milano.
- Calzolari M. (1996), *Introduzione allo studio della rete stradale dell'Italia romana: l'Itinerarium Antonini*, Vol. 7, fasc. 4, Roma.
- Calzolari M. (2003), "L'Italia e L'Etruria nella Tabula Peutingeriana", in *Prontera*, 3, pp. 35-47.
- Cancellieri M. (1990), "Il territorio pontino e la via Appia", in *Archeologia Laziale*, 10/1, pp. 61-72.
- Caucci von Saucken P. (2014), *Santiago, Gerusalemme: complessità, unità e integrazione delle peregrinationes maiores*, in *In viaggio verso Gerusalemme: Culture, Economie e Territori - Walking towards Jerusalem: Cultures, Economies and Territories*, edited by A. Trono, M. L. Imperiale, G. Marella, Galatina, Lecce, pp. 3-11.
- Cohen E., Scott Cohen S. (2012), "Authentication: Hot and Cool", in *Annals of Tourism Research*, 39/3, pp. 1295-1314.
- Condevaux A., Djament-Tran G. et al. (2016), "Before and after tourism (s). The trajectories of tourist destinations and the role of actors involved in "off-the-beaten-track" tourism: a literature review", in *Via@*, 10, pp. 2-27.
- Dallari F. (2011), *Emilia-Romagna come componente della Terza Italia: specificità e cambiamenti*, in *Tante Italie Una Italia. Dinamiche territoriali e identitarie*, edited by C. Muscarà et al., Milan, V. III, pp. 133-157.
- Dallari F. (2007), *Distretti turistici tra sviluppo locale e cooperazione interregionale* in *Geografia del turismo* edited by F. Bencardino, M. Prezioso, *Geografia del turismo*, Milano, pp. 194-218.
- Dallari F., Mariotti A. (2005), "L'Italia tra distretti industriali e sistemi turistici locali", in *Ambiente, società, territorio. Geografia nelle scuole*, 4, pp. 26-32.
- Davies H., Davies H. E. (2002), *Roads in Roman Britain*, Stroud.
- Dematteis G. (2003), *Il modello SLoT come strumento di analisi dello sviluppo locale*, in *SLoT quaderno 3* edited by G. Dematteis, Bologna, pp. 13-27.
- Dematteis G., Governa F. (2005), *Territorialità, sviluppo locale, sostenibilità: il modello SLoT*. Milano.
- Dematteis G., Janin Rivolin U. (2004), "Per una prospettiva sud-europea e italiana nel prossimo SSSE" in *Scienze regionali*, 2, pp. 135-150.

- Dinis A. (2011), "Tourism, niche strategy and networks as factors for both entrepreneurship and rural sustainability", in *IX Rural entrepreneurship conference: a sustainable rural*, pp. 1- 19.
- Ferlazzo L. (2011), "Involvement or engagement" in *Educational Leadership*, 68/8, pp. 10-14.
- Fuà G. (1983), *L'industrializzazione nel Nord Est e nel Centro*, in *Industrializzazione senza fratture*, edited by G.
- Fuà, C. Zacchia, Bologna, pp. 10-22.
- Fullagar S., Markwell K et al. eds. (2012), *Slow tourism: Experiences and mobilities*, Bristol.
- Lachin M., Rosada G. (2003), "Le vignette ad aquas nella Tabula Peutingeriana: il caso di Quaeri in Istria", in *Histria Antiqua*, 10, pp. 247-254.
- Levi A. C., Levi M. A. (1967), *Itineraria picta: Contributo allo studio della Tabula Peutingeriana* (Vol. 7), Roma.
- Magini M. (2003), *In viaggio lungo le strade della Tabula Peutingeriana in Tabula Peutingeriana. Le antiche vie del mondo*, edited by F. Prontera, Città di Castello, pp. 7-15.
- Maitland R., Newman, P. eds. (2014), *World tourism cities: Developing tourism off the beaten track*, London.
- Morandini F. (2013), "Le acque termali nella Tabula Peutingeriana", in *Aquae salutariferae*, pp. 273-287.
- Munzi M., Zennati M. (2004), "Una postazione di miliari presso Abu Kammash (Tripolitania)", in *Libyan Studies*, 35, pp. 123-130.
- Novelli M. ed. (2005), *Niche tourism: contemporary issues, trends and cases*, London.
- Paola B. V. (1998), "Considerazioni sulla via severiana e sulla tabula peutingeriana", in *Mélanges de l'Ecole française de Rome Antiquité*, 110/2, pp. 929-993.
- Pratilli F. M. (1745), *Della via Appia riconosciuta e descritta da Roma a Brindisi libri 4 di Francesco Maria Pratilli per Giovanni di Simone*.
- Prontera F. ed. (2003), *Tabula Peutingeriana: le antiche vie del mondo* Firenze.
- Quilici L. (1989), *Via Appia da porta Capena ai colli albani*, Roma.
- Reed M. G., Bruyneel S. (2010), "Rescaling environmental governance, rethinking the state: A three-dimensional review", in *Progress in human geography*, 34/5, pp. 646-653.
- Rhodes M. L., Donnelly-Cox G. (2008), "Social entrepreneurship as a performance landscape: the case of 'Front Line'", in *Emergence: Complexity and Organization*, 10/3, pp. 1-35.
- Sabatier P. A. (1986), "Top-down and bottom-up approaches to implementation research: a critical analysis and suggested synthesis", in *Journal of public policy*, 6/1, pp. 21-48.
- Selwyn T. (1996), *Introduction*, in *The tourist image. Myth and mythmaking in tourism*, edited by T. Selwyn T., Wiley, pp. 1-32.

- Staffa A. (2005), "Insediamento e circolazione nelle regioni adriatiche dell'Italia centrale fra VI e IX secolo", in *L'Adriatico dalla tarda antichità all'età carolingia*, pp. 109-182.
- Swyngedouw E. (2004), "Globalisation or 'glocalisation'? Networks, territories and rescaling", in *Cambridge review of international affairs*, 17/1, pp. 25-48.
- Talen E. (2000), "Bottom-up GIS: A new tool for individual and group expression in participatory planning", in *Journal of the American Planning Association*, 66/3, pp. 279-294.
- Waterton E., Smith, L., et al. (2006), "The utility of discourse analysis to heritage studies: The Burra Charter and Social Inclusion", in *International Journal of Heritage Studies*, 12/4, pp. 339-355.
- Xinhua Q., et al. (2005), "Strategies of Sustainable Tourism Development Basing on the Niche Theory", in *Ecological Economy*, 8, pp. 1-23.
- Zabbini E. (2012), "Cultural Routes and Intangible Heritage", *Almatourism - Journal of Tourism, Culture and Territorial Development*, [S.l.], 3/5, pp. 59-80.

WEBSITES

- Accord Partiel Élargi sugli Itinerari Culturali. (2010). http://culture.routes.net/sites/default/files/EICR-COE_depliant-presentation-institut-juin2016-ITA_IMP.pdf.
- Almatourism, Journal of Tourism, Culture and Territorial Development (2017), Vol 8, No 16, "Romei and Francigeni. The Sources for a European Pilgrimage History". <https://almatourism.unibo.it/index>
- Almatourism, Journal of Tourism, Culture and Territorial Development (2017), Vol 8, No 6, "Via Francigena: Long Way of Peace among the European Landscapes". <https://almatourism.unibo.it/issue/view/606>
- Almatourism, Journal of Tourism, Culture and Territorial Development (2013), Vol. 4, No 8. <https://almatourism.unibo.it/issue/view/404>
- Almatourism, Journal of Tourism, Culture and Territorial Development (2013), Vol 4, No 7. <https://almatourism.unibo.it/issue/view/391>
- Candela G., Dallari F. et al. (2005). https://scholar.google.it/scholar?hl=it&as_sdt=0%2C5&q=Candela%2C+Dallari%2C+Gola%2C+Scorcu%2C+2005&btnG=#d=gs_cit&p=&u=%2Fscholar%3Fq%3Dinfo%3AWw_j6grUiuMJ%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Dit .
- Convenzione di Faro (2005)
- www.beniculturali.it/mibac/multimedia/MiBAC/documents/1492082511615_Convenzione_di_Faro.pdf .
- Cultural routes (2017a). www.coe.int/en/web/cultural-routes/by-theme .
- Cultural routes (2017b). www.culture-routes.net .

- Dallari F. (2006). <http://docplayer.fr/8587638-Projet-le-tourisme-culturelle-entre-developpement-local-et-cooperation-interregional-fiorella-dallari.html>.
- Dallari, F. (2011). <https://books.google.it/books?id=TugFDsILUNMC&pg=PA346&dq=mesa-ROMIT+project&hl=it&sa=X&ved=0ahUKewjfrvLZmeLaAhUDkywKHQf-BcoQ6AEIjzAA#v=onepage&q=mesa-ROMIT%20project&f=false>.
- EICI (2017). www.coe.int/en/web/cultural-routes/the-roman-emperors-and-danube-wine-route .
- MiBACT (2017). www.turismo.beniculturali.it/home-cammini-ditalia/ .
- MiBACT (2017c). www.turismo.beniculturali.it/home-cammini-ditalia/atlan-te-dei-cammini/.
- OmnesViae. <https://omnesviae.org/it/#>
- Parco Regionale dell'Appia Antica (2015). www.parcoappiaantica.it/home/il-parco/storia .
- PST (2017). www.turismo.beniculturali.it/wp-content/uploads/2017/07/Piano-Strategico-del-Turismo_2017_IT.pdf
- ROMIT (2003/2006). www.keep.eu/keep/project-ext/362/ROMAN%20ITINERARIES .

ATRIUM: THE CULTURAL ROUTE AND THE HERITAGE OF FORLÌ

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Keywords: ATRIUM, cultural route, 20th century heritage, totalitarian regimes, Forlì.

INTRODUCTION

Constituted in 2013, the ATRIUM Association (“Architecture of Totalitarian Regimes of the XX century In Europe’s Urban Memory”) had the aim of managing the European Route and was founded at the same time as the establishment of the Cultural Route of the same name (<http://www.atrium-see.eu/>).

Promoted by the Municipality of Forlì, ATRIUM is the first explicit attempt by a public administration to take a step forward in supporting valorisation of a significant architectural and urban heritage that was the outcome of the policies implemented by various totalitarian regimes in central and eastern Europe during the twentieth century. The aim of ATRIUM is to interconnect those experiences which, whilst they were not identical, shared a single strict and “inconvenient” common denominator: that they were all produced by totalitarian regimes.

The task of constructing this transnational Cultural Route, to which the Council of Europe gave its recognition on 11 April 2014, has been devolved to the competent institutions in the various countries (Albania, Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Serbia, Slovakia and Slovenia). These local institutions may be municipal, intermunicipal, provincial or regional in nature but as a precondition for inclusion, they are required to guarantee compliance with the obligations of the Charter of Membership, which include promoting the Cultural Route, raising awareness of its themes, and identifying places for various activities (http://www.atriumroute.eu/images/media_articoli/documenti/ATRIUM_association/ATRIUM_statute_IT.pdf). The lead promoter and main actor on behalf of these local institutions is Forlì, where the ATRIUM Association is also formally registered (Fig. 1). In fact, the very extensive and diversified rationalist heritage of Forlì identifies it as one of the most important of the places in Italy that were affected by architectural change during the twenty years of fascism, known as the ventennio.

ATRIUM is now also being promoted by public administrations in many countries, and denotes a fundamentally important step forward, by overcoming an ostracism that has long endured (for different periods in different countries) which, being by nature ideological, has been impeding dispassionate assessment of the architectural value of large numbers of buildings. In the case of Italy, these date from between the 1930s and early 1940s. Taking their characteristics from political intentions that were usually of a social type, they were the expression of ideas that were being developed by architects and engineers who were frequently the bearers of an advanced design culture that enabled Italy to take a crucial forward step on at least two fronts: overcoming architectural languages that had become obsolete, and extensively adopting new architectural and construction technologies - such as the use of structural reinforced concrete - along with a new approach to the technical services of buildings and in a more general sense, by introducing new materials to the construction site that were being developed by very advanced industrial research.

ATRIUM is engaged in two main categories of activity: on the one hand, to promote knowledge and appreciation of the enormous architectural heritage left by the regimes that were present in the various countries, and on the other, to promote a rapprochement between the peoples of those countries and these manifestations, which are often ultimately represented as manifestations to be cancelled, at least from memory, because they are reminders of periods that are considered to have been totally negative; and on the other hand, to achieve an effective enhanced appreciation of that heritage, so that a virtuous process aimed at its conservation can be set in train. Both of these activities are expressed in the different countries in the form of numerous actions that ATRIUM is promoting via exchanges of knowledge and experiences: identifying and studying the individual buildings, understanding their particular problems of conservation and enhancing appreciation of their value; exporting successful models developed by individual partners; and encouraging the inhabitants of each country, as well as tourists, to make full use of this architectural and urban heritage. ATRIUM sees all of this activity as an opportunity for the growth and development of those communities by incentivising the various opportunities that it makes possible: offering visitors hospitality and guidance, and studying and restoring a heritage of which much has still not been fully investigated and that presents specific problems of conservation.



Fig. 1 The countries of the ATRIUM European Cultural Route, showing Forlì as promoter of the initiative (Re-elaboration by the Authors)

ATRIUM AND FORLÌ: BEGINNING THE PROCESS TO ENHANCE THE CITY'S RATIONALIST HERITAGE

Four years after the Council of Europe gave its recognition to the ATRIUM European Cultural Route, the activities of the ATRIUM Association in Romagna can be summarised.

For some time the municipal administration in Forlì has been working to enhance appreciation of its extensive and varied heritage of rationalist architecture. In parallel with the official recognition accorded to the ATRIUM Cultural Route, the municipality began the process of enhancing its rationalist heritage by deciding to restore one of the city's most iconic and representative buildings, the Casa del Balilla (later the Gioventù Italiana del Littorio). Built between 1933 and 1935 to a design by the Roman architect Cesare Valle and originally dedicated to Arnaldo Mussolini, the

Forlì Casa del Balilla was a significant element in the process of defining fascism's new official agencies for the physical and moral education of the young (Fig. 2). Six years after it was inaugurated, the construction of an additional floor altered its overall dimensions and proportions; not long after that, as the war continued, the Casa del Balilla was denied any potential for more extensive use. Its subsequent post-war abandonment became, in effect, part of the *damnatio memoriae* to which all fascist buildings were relegated, with disastrous consequences for their survival, even though if compared to the long abandonment in which many of them were left, the Casa del Balilla in Forlì was reactivated quickly. However although it was already back in operation by the end of the 1940s, the failure to re-use some of its parts contributed to accelerate its general deterioration. In our own time, the recognition of its value in the 21st century as historic evidence led to the decision to undertake restoration works and ensure that it is passed on to posterity (Favaretto, Pretelli, Signorelli 2016) (Fig. 3). These works, carried out from 2009 to 2015, marked the beginning of a process of enhancing appreciation of Forlì's rationalist heritage. If for no other reason they had the merit of posing the question as to how an architecture of outstanding historic, material, and testimonial interest should be passed on to future generations, in Forlì and elsewhere.



Fig. 2 C. Valle, Casa del Balilla, Forlì. The building as it appeared when it first opened (Archivio Cesare Valle Roma, Fotografie, scatola 25, CV-FOT/039)



Fig. 3 C. Valle, Casa del Balilla, Forlì. The building as it appeared after restoration (Photos: G. Favaretto 2016)

THE RATIONALIST ARCHITECTURE OF FORLÌ: KNOWLEDGE, CONSERVATION, AND FRUITION

One of the primary objectives that the municipality of Forlì has set for itself in recent times is to valorise its rationalist architecture and in fact, following its conservation works to the Casa del Balilla, it has promoted many other activities to support that rationalist heritage.

In that context, the three most important elements at the base of the ATRIUM project are knowledge, conservation, and fruition. As the Italian Code of Cultural Heritage and Landscape confirms, and as is well known, the indispensable components inherent in any pathway that aims for appreciation and enhancement of heritage consist of “performing functions and regulating activities” for the purpose of “promoting knowledge about cultural heritage” in order to ensure “the best conditions for its public use and enjoyment”, and to promote and support “conservation works” to existing heritage (Legislative Decree. 42/2004, art. 6, paragraph 1).

Knowledge is the first of the three key aspects of the ATRIUM project, and is an essential component for designing architectural conservation projects with awareness and a sense of responsibility. Knowledge also plays a key role in the determination of strategies for the conservation and reuse of existing heritage. With that

in mind, and in its awareness of the need to amass knowledge about the rationalist architecture of Forlì as a “City of the Twentieth Century”, ATRIUM has begun collaborating with a research group at the Department of Architecture of the University of Bologna - which includes the present Authors - to enrich the body of available knowledge about the rationalist heritage of Forlì.

As this research proceeds, the information deriving from it is being made publicly available in a range of different ways: for cultural tourism, innovative communication systems will enable useful information to be provided to visitors from near or far, who will be able to learn about the history, events and significant elements of the architecture of a country that was deeply marked by the events of fascism. Digital tools will contribute to the attainment of these goals: multimedia documents, photographs, drawings, and projections that will enable users to gain an understanding of the historic and documentary importance of this heritage. As tourists move through the streets of Forlì and within the buildings, they will be able to access this information using smartphones or tablets to connect to public hotspots. In that way they will increase their knowledge of the buildings and their awareness of the testimonial relevance that is inherent in their physical presence. For professionals there will be opportunities to take their research much further and in greater detail, using a system that will provide information about the materials and technologies used to construct the buildings and for the other works subsequently carried out, as a useful knowledge base for developing an approach to restoration that will be critically and respectfully aware of the existing fabric.

Conservation is the second of the three key aspects of the ATRIUM project. Although the conservation work at the Casa del Balilla of Forlì is not yet fully complete, it marks the beginning of a plan to transmit Forlì’s rationalist heritage forward into the future; in fact other studies are already under way to acquire knowledge about another building, the Asilo Santerelli [nursery school], preliminary to its conservation.

Designed by Guido Savini, construction of the Asilo Santerelli began in 1934, a year after work had already started on the Casa del Balilla. Originally dedicated to Rosa Maltoni, the mother of Benito Mussolini, it had two official inaugurations: by Donna Rachele Mussolini in 1937 and Queen Elena of Italy in 1938 (Fig. 4). By comparison with other buildings in Forlì that featured the extensive use of marble as the finish for the elevations, in this case the regime’s usual quest for pomposity seems less emphatic. The main finish is render, although this did leave scope for a few episodes of considerable refinement such as the pseudo-fresco decorations by Francesco Olivucci (hidden from sight after the war by the application of a plaster skim coat). By 1941 repeated water infiltrations through the flat roof of the Asilo led to the addition of a hipped roof. In subsequent years the building was progressively enlarged and in 1970 to increase its capacity, an additional storey with a pitched roof was constructed above the entrance portico. The Asilo then continued to serve its original purpose as a nursery school until 2012, when the teaching and

pedagogical activities were transferred elsewhere; by then it had become evident that the building was in need of attention (Favaretto, Signorelli 2017) (Fig. 5).



Fig. 4 G. Savini, Asilo Santarelli, Forlì. The building as it appeared in 1936 (<http://atrium.comune.forli.fc.it/infanzia-a-forli-e-fascismo/> [25/04/2016])



Fig. 5 G. Savini, Asilo Santarelli. The building as it appeared in 2017 (Photos: G. Favaretto 2017)

When the Asilo Santerelli was abandoned in 2012, the Architectural Restoration Workshop of the Degree Course in Architecture at the University of Bologna (Tutors: Prof. Arch. Marco Pretelli, Prof. Arch. Lucia Serafini) seized the opportunity to begin considering possible new uses for the building. A series of proposed design drawings were put on display in an exhibition, and this was also a useful opportunity to put forward a range of strategies for its conservation and re-use.

Contemporaneously, as part of its project to enhance appreciation of “Forlì, city of the Twentieth Century”, the municipality took the decision to begin restoring the Santerelli. Today the Santerelli is in the process of being converted into a place of culture, identity, and innovation for the city and has been included in a network of “open workshops” operated by the Regional Government (<http://www.regione.emilia-romagna.it/fesr/eventi/2017/apertura-dellex-asilo-santarelli/>). The intention is to give the building a new function as an “open workshop on cultural heritage and active citizenship”: a dynamic place that will serve as a venue for meetings and activities and will be able to host a centre of narration as part of a geographically diffused museum of the twentieth century, as well as a public library and an open innovation workshop.

Fruition is the third key aspect of the ATRIUM project. To ensure that all the architectural assets of Forlì are preserved, the municipality has set itself the objective of adapting the buildings of the ventennio for new uses, as a necessary element for ensuring that they are conserved. Many of the city’s rationalist buildings had already been given new uses that are more or less similar or dissimilar to those for which they were originally designed; they will all require conservation and regular planned maintenance. For other buildings that were neglected and abandoned, accelerating their processes of deterioration, it is essential to consider strategies for their re-use that will be compatible with their intrinsic values. The restoration project for the Casa del Balilla addresses that need precisely, by identifying new uses and adding new uses, such as a museum of gymnastics, that partly reinterpret its original functions. Following on from the Casa del Balilla, the next step will be to begin conservation of the Santarelli nursery school. The new uses that have been identified for the Santarelli will help to strengthen its intrinsic vitality as an architectural object, with new spaces that will tell the story of “Forlì, City of the Twentieth Century”, as well as dedicated rooms for meetings and exchanging ideas which, responding to contemporary needs, will re-animate a work of architecture of extraordinary relevance whose value is beyond dispute.

STRATEGIES FOR THE FUTURE: CULTURE, PARTICIPATION, INNOVATION

Public participation plays a key role in the development of initiatives for the enhancement and appreciation of the buildings constructed in Forlì in the inter-war

period. This was affirmed by the two editions of the “Forlì città del Novecento” [“Forlì: city of the Twentieth Century”] Festival, which featured a full calendar of seminars, multimedia screenings, guided visits, and meetings. In the same perspective the ATRIUM project has been structured so that it accords with the intention of attaining different but closely related objectives via its principal aims; these include increasing knowledge, fostering culture, and enhancing awareness of the intrinsic value of Forlì’s built heritage.

Both of the “Forlì città del Novecento” events included exhibitions, held in the Casa del Balilla, that attracted numerous participants. The first exhibition presented in-depth information about the events between the two wars in the Romagna region that were associated with Cesare Valle and his buildings (Tramonti 2015); the second exhibition analysed the prolific construction activity that the fascist regime implemented beyond Italy’s borders (Tramonti 2017) (Fig. 6).



Fig. 6 From left: poster of the exhibition “Cesare Valle. Another modernity: architecture in Romagna” (Forlì, 18 September-25 October 2015); poster of the exhibition “Architecture and urban planning in the overseas territories. Dodecanese, Ethiopia, Albania (1924-1943)” (Forlì, 21 April-18 June 2017)

The public were not mere spectators at these activities, and the strategies that the Regional Government is planning for its “open laboratories” are also intended to

develop shared solutions that will create welcoming and participatory places in the towns of Romagna, as incubators dedicated on the one hand to exchanges of views and cooperation, and to innovation on the other.

The Asilo Santarelli has been identified as an “open place for the public” for social innovation as part of a participatory design process that can then be used to develop shared ideas (Fig. 7). Cultural heritage and active citizenship are basic elements of this operation, in which the intentions are to enhance appreciation of cultural heritage, to include the public in decision-making processes, and to construct dedicated spaces for the exchange of ideas. The innovation thus generated will be enhanced by creating environments in which digital skills will be developed for the city and the citizens. These will be designed to provide a diverse public with historic and technical information about the rationalist architecture of Forlì, and can be developed as part of a more extensive cultural, innovative, participatory plan.



Fig. 7 From left: a meeting at the Casa del Balilla; a guided tour of the Santarelli nursery school (Photos: G. Favaretto 2017)

These strategies for enhancing the inter-war architecture of Forlì will thus be able to influence not only the local culture, heritage and society, but the economy and tourism as well, by posing “new questions associated with the use and management of these cultural resources in the knowledge that, whilst fully respecting the continuity between past and future, new possibilities for local development” can be offered (Boriani, Gabaglio et al. 2009, p. 74).

BIBLIOGRAPHICAL REFERENCES

- Boriani M., Gabaglio R., Giambruno M., Pistidda S. (2009), *La regione di Delvina: un itinerario di turismo culturale, in Albania e Adriatico meridionale. Studi per la conservazione del patrimonio culturale (2006-2008)*, edited by M. Boriani, G. Macchiarella, Firenze, pp. 74-83.

- Favaretto G., Pretelli M., Signorelli L. (2016), “Eresia” o assenza di “credo”? Il restauro delle architetture del totalitarismo: l'intervento alla Casa del Balilla di Forlì, in *Eresia ed ortodossia nel restauro. Progetti e realizzazioni*, edited by G. Biscontin, G. Driussi, Marghera-Venezia, pp. 267-277.
- Favaretto G., Signorelli L. (2017), Which authenticity for Fascist regime architecture? The case of the Santarelli Kindergarten in Forlì (Italy), in *Rehab 2017. Proceedings of the 3rd International Conference on Preservation, Maintenance and Rehabilitation of Historical Buildings and Structures*, Braga 14-16 June 2017, edited by R. Amoêda, S. Lira et al., Barcelos, pp. 783-793.
- Pretelli M., Signorelli L., Favaretto G. (2016), “Architettura Razionalista a Forlì. La conoscenza per il progetto di restauro”, in *Materiali e Strutture. Problemi di conservazione*, 10, pp. 63-82.
- Tramonti U. ed. (2017), *Architettura e urbanistica nelle terre d'oltremare. Dodecaneso, Etiopia, Albania (1924-1943)*, Bologna.
- Tramonti U. ed. (2015), *Cesare Valle. Un'altra modernità: architettura in Romagna*, Bologna.

WEBSITES

- <http://www.atriumroute.eu/>
- <http://www.atrium-see.eu/>
- <http://www.regione.emilia-romagna.it/fesr/eventi/2017/apertura-dell'ex-asilo-santarelli/>

THE "APPIA REGINA VIARUM" PROJECT: ENHANCING AND SYSTEMATISING THE ROUTE OF THE ANCIENT ROMAN VIA APPIA

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Keywords: "Appia Regina Viarum" project, cultural route, walking trail, management

From ancient times the Via Appia Antica has been one single great piece of infrastructure: it was the road from Rome to Brindisi that passed through many territories, each with different geological, historic, landscape, and urban stratifications. Named Regina Viarum in the first century AD by the celebrated Roman poet Publius Papinius Statius (*Silvae*, 2, 2, 12), the Via Appia has been an element of Italy's national identity for approximately the past two hundred years; as not only the physical but also the cultural expression of a unified country it remains alive in our collective imagination. It was thanks to the Via Appia that the excellences of the Roman legions were able to move to and from the capital of the Empire; it was the Regina Viarum along which Maecenas and the poet Quintus Horatius Flaccus (Horace) travelled to Brundisium in 37 BC for the renewal of the agreement between Octavian and Antony; and where the Appia reached Brindisi, it reached the port of departure towards the East, a transit point for spices and textiles and the point from which the Asian trade routes were accessed.

Mentioning these historical events now, however briefly, in relation to the birth of the Via Appia, induces us to reflect on the outstanding opportunity that has been promoted by the Ministry of Cultural Heritage and Activities that re-proposes, in a new way, a route that was born out of the need for rapid, efficient, and effective military and other forms of transport and that eventually came to be historicised over thousands of years, but that can now be recapitalised and valorised in a context of sustainable mobility (slow travel), enhancing and upgrading a diffused type of heritage that takes visitors away from the major tourist flows: a project with the potential to become an example of best practice for the strategic and cultural transformation of other walking routes of a similar kind.

In fact, it is the intention of the "Appia Regina Viarum" project¹ to promote an innovative vision for this ancient road by creating routes that will encourage slow tourism, will increase the variety of Italy's cultural offer, and will at the same time act as a stimulus for the protection and enhancement of the Via Appia Antica itself. So far as the interest of the legislator is concerned, in past years this has mainly been confined to circumscribed sections of the road, such as the part that lies within Rome itself, which unsurprisingly is also the best preserved part. Recently, with the Decree of 23 January 2016, MiBACT constituted, among other institutions and museums of significant national interest², the Appia Antica Archaeological Park³. Thus, the establishment of this office was a sign that for the first time the emphasis had shifted to the need to consider the ancient consular road as a theme more extensive in its scope, and in fact one of the provisions of that Decree was that the director of the Archaeological Park should also have responsibility for the enhancement of the consular road in its entirety. However, although the Via Appia (relative to the part within Rome) has already found its own exclusive authority, the legislation has now also recognised that there is a growing need for it to be upgraded as a heritage asset that must be "given a new shape" for all the rest of its length. With this aim in mind it is the firm intention of the public administration, particularly of Service II of the General Secretariat⁴, to realise the project for the creation of the cammino, a trail, a walking route and to make the Regina Viarum functional so that at a later stage other initiatives will be able to enhance the many different territorial settings through which it passes (Fig. 1).

This is a new model for a type of project that considers the whole road as an unicum and a cultural attraction: not only an asset in itself. Via Appia has now given greater scope so that it can become a diffused archaeological site all the way along the approximately 600 km of the consular road, giving it the possibility to amplify the effects of its own enhancement and extend them into the surrounding cultural places. This new project must therefore be understood in its complexity that involves a multiplicity of programming tools, both national and regional, which form part of the strategic national and European funding programmes of the MiBACT, including

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- 1 Resolution no. 3/2016 FSC (Fund for Development and Cohesion) 2014-2020 of the Inter-ministerial Committee for Economic Planning of 1 May 2016, giving approval to the "Cultura e Turismo" Plan.
 - 2 Art. 6, paragraph 1, Ministerial Decree 23 January 2016
 - 3 see the contribution of Rita Paris, Director of the Appia Antica Archaeological Park, in this present volume.
 - 4 On 15 February 2017 the Secretary General appointed the architect Dora Di Francesco, an Officer of Service II, as the person responsible for implementing the Appia Regina Viarum project. In addition, the Ministerial Decree of October 5, 2017 designates Ms. Di Francesco as the Managing Authority for the 2014-2020 FDC (Fund for Development and Cohesion) "Culture and Tourism" Plan.

several areas where there are already ERDF-funded works forming part of the 2014-2020 “Culture and Development” National Operational Programme.



Fig. 1 Minturnae, the road and the foundations of the Capitolium (Photo: Antonio Politano)

The first significant step for the implementation of this project was the establishment of a Technical Working Group by Service II of the General Secretariat of the MiBACT along with the Regional Governments of Lazio, Campania, Basilicata, and Puglia, to draft an agreement for the enhancement of the Appia that is aimed at identifying shared actions for carrying out the works to systematise the whole length of the cammino-trail (from Rome to Brindisi). The activity of this Working Group

enabled the MiBACT and the Presidents of the relative regional administrations to reach an operational agreement jointly signed on 1 March 2018, which represented a decisive moment for the realisation of the Appian walking route. Annexed to the agreement, a master document prepared by Service II of the General Secretariat outlined the project and defined the route the Appia takes as it passes through the above mentioned four regions (Fig. 2), for approximately 600 km and affecting 80 municipalities⁵. The Ministry identified the archaeological, historical, and architectural assets, the naturalistic areas existing along the route and the parts of the route that are already functional, as well as the necessary deviations (for security or other reasons) from the ancient trail of the road. It has also developed a Geographical Information System that brings together databases relative to cultural heritage, programming, and conservation works on a single geographical basis, as a Geo-Cultural Hub for a new walking route that follows the trail of the ancient Roman road. Additionally, an aerial survey of the Via Appia was carried out, using digital techniques to generate a photogrammetric survey, and a LiDAR (laser) survey for the digital terrain model⁶. This Hub will be used as a strategic tool for implementing the walking route as a cultural route; in fact the potential of the Hub and of its technology will offer different services: from providing assistance to visitors, to communication support for the development of the territorial fruition chain.

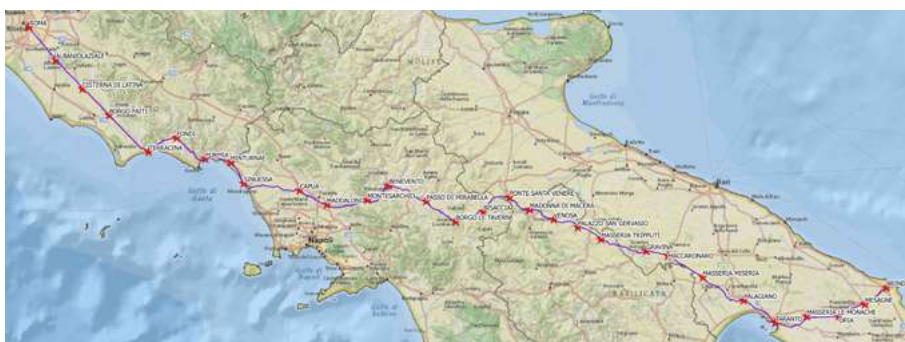


Fig. 2 Via Appia: the route as defined by the "Appia Regina Viarum" project

This Administration is working in synergy with the regional one in order to: identify and implement appropriate "complementary" actions that will enhance heritage assets falling within the competence of the local and regional authorities; consolidate and organise the walking route as an itinerary of excellence, whilst adding and

- 5 Alongside the traditional route are the Traiana variant (Benevento-Brindisi) 311 km long and another "coastal" variant 52 km long that passes through the Campania and Puglia regions.
- 6 In this regard see the contribution by G. Biallo, L. Scaroina, and P. Silvagni in this present volume.

extending it to comprise other material and immaterial resources and infrastructures, characteristic of each of the different geographical areas, in order to personify the tourist offer of the various territories through which the route passes. It works along a shared strategy based on an innovative vision that enforces the European Union programming and binds together the different geographical areas that have responsibility for managing ROPs (Regional Operational Programmes), thereby consolidating a European vision in the development of Southern Italy. In this regard, for the part of the route that connects Palagiano to Taranto and passes through the areas occupied by the ILVA steelworks, the General Secretariat has requested the Institutional Development Contract Technical Working Group for Taranto to assess the feasibility of creating a protected "green corridor", planted with trees and bushes, that would enable the tourists, walking along the Appia, to pass through the industrial area, thus bringing it back to a public use. Apart from the fundamental technical need to find a valid alternative to the SS7 Appia National Highway, which is not suitable for tourism, it seems appropriate in this case to identify "symbolic" activities able to upgrade and enhance a geographical area that has been worn down by a continuous urbanisation.

Service II of the General Secretariat is also taking forward an initiative that will introduce satellite monitoring for the whole length of the Via Appia, with the involvement of the relative national and international institutions. Monitoring will serve two purposes: on the one hand, it will give users of the route a constant overview of each part, providing a service that will also ensure their safety at all times in case of emergency (because they will be immediately identifiable at any point along the route); on the other hand, it will enable satellite images to be acquired, which will allow to keep the Appia and its buffer zone under constant supervision and will provide support for landscape safeguarding works.

The recovery of this historic route, that is still imbued with its own lifeblood, will hopefully improve the economies of the territories through which Appia passes motivating the integration of cultural and tourist systems and promoting the development of new networks for a sustainable cultural tourism: a long-lasting complex task that will revive the Appia consular road to its classical appellation of Regia Viarum.

PART 3

**THE ITALIAN CASE STUDY
OF THE ANCIENT ROMAN
CONSULAR STREET OF APPIA**

THE VIA APPIA ANTICA: A MODEL FOR THE CONSERVATION AND GROWTH OF CULTURAL HERITAGE FOR THE MODERN CITY

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Keywords: Appia Antica Archaeological Park, conservation, cultural heritage and modern city

"... cultural and environmental heritage are common assets, and the final purpose of their conservation must be public use and enjoyment. Safeguarding them is a matter of principle; discretionary decisions are not admissible..." (Antonio Cederna)

VIA APPIA IN CONTEXT

On the master plan of Rome the Via Appia Antica is represented as a clearly defined wedge-shaped area, coloured green, extending from the main archaeological site in the centre of the city as far as the foothills of the Castelli Romani (Fig. 1). Recognised by archaeological landscape constraints as being of cultural interest, safeguarded by planning instruments and listed as one of the protected natural areas of the Lazio Regional Government, this wedge-shaped area is crossed by the ancient Appian road, still perfectly preserved within the roman territory, whose trail and original route can still be traced as far away as the city of Brindisi in Puglia, where it terminated.

In Rome the Appia penetrates into the built-up fabric of the city, creating a sharp discontinuity, which amplifies the beauty and allure of places so richly endowed with monuments and archaeological complexes of the greatest importance that along with the countryside that surrounded them, had created a unique landscape worldwide, to be protected and enhanced as a single unified ensemble.

NINTEENTH CENTURY INTERVENTION IN APPIA

Down the centuries the richness of these monuments, exceptionally well preserved, has attracted the interest of scholars, artists, and architects who came here fascinated by the ruins and the landscape and who immortalised the Via Appia in their paintings, watercolours, and photographs.

Since the early 19th century a new, more scientific approach in the study of antiquity, together with the awareness that so precious ancient vestiges should not be left without any care, poses the Appia at the centre of a restoration project realised by the Papal Government under the guidance of the architect Luigi Canina (Canina 1853). The road itself, together with the publicly owned monuments, are transformed into an open-air museum visited by the public, a model for a new archaeological and landscape layout (Fig. 2). Having been left damaged by the traffic of agricultural vehicles and by the removal of material to be re-use elsewhere, the road was now freed from detritus and restored to dignity as a monument complete with its carriageway, its paving stones -- where still preserved, its footpaths, and the monuments on both sides. The State also acquires two wide lateral strips, separating them from the still privately-owned properties by constructing new low dry-stone walls called "*macere*". In front of the ruins of the ancient tombs, new screen walls are erected on which are staged the elements that had originally covered or decorated the ancient funerary monuments: statues, portraits, inscriptions, architectural elements, were thus exposed and visible in their original context, adopting the 'modern' approach that ancient relics should be conserved *in situ.*, and in a form that had already been experimented earlier by Antonio Canova and Giuseppe Valadier, in Appia.

Between the end of the 19th and the early decades of the 20th century the new open museum arrangement of Appia, exhaustively documented in the drawings of Canina's work, attracts visitors from all over the world and stimulates scholars and photographers to describe and depict it, including photographs that immortalise the road with its monuments and landscape, now enhanced by newly planted pines and cypresses (Muñoz 1913). Appia, thus, becomes a privileged place for the observation and enjoyment of antiquity in its original state. However since 1870, at the archaeological site in the centre of the city and along the first part of the Appia at the foot of the Palatine Hill, planning decisions of a different conception were put forward, dictated by the intention to upgrade Rome to its new role as Capital of the Kingdom of Italy and in the need to resolve the relationship between the significant remaining evidence of Rome's ancient past and its future vision as a European capital traversed by wide tree-lined avenues: a vision that was put into effect at the cost of carrying out radical transformations in which the ancient remains were seen as an exclusive kind of *décor* (Capobianco 2010; Insolera 2011).

Over the following decades the monumental complex of the Appia road was no longer given any attention and privates took advantage building wealthy country

villas that transformed the area into a place for the privileged; while often the ancient remains were smashed to pieces or reused in order to embellish the new residences. In parallel, new roads interrupted the integrity of the majestic Roman via, which were asphalted over for easier access to the airport of Ciampino and the movie studios at Cinecittà.

If this havoc was contained, at least in print if not in fact, it is thanks to the tireless work of Antonio Cederna (Cederna 1997, Cederna 2006), who started writing articles of denunciation since 1953 with "The Gangsters of the Appia" (Fig. 3). who had international resonance. From then onwards, Cederna, with his polemic and well documented writings, never ceased to challenge the damage being perpetrated on such an invaluable heritage; a commitment that remains absolutely relevant even today.

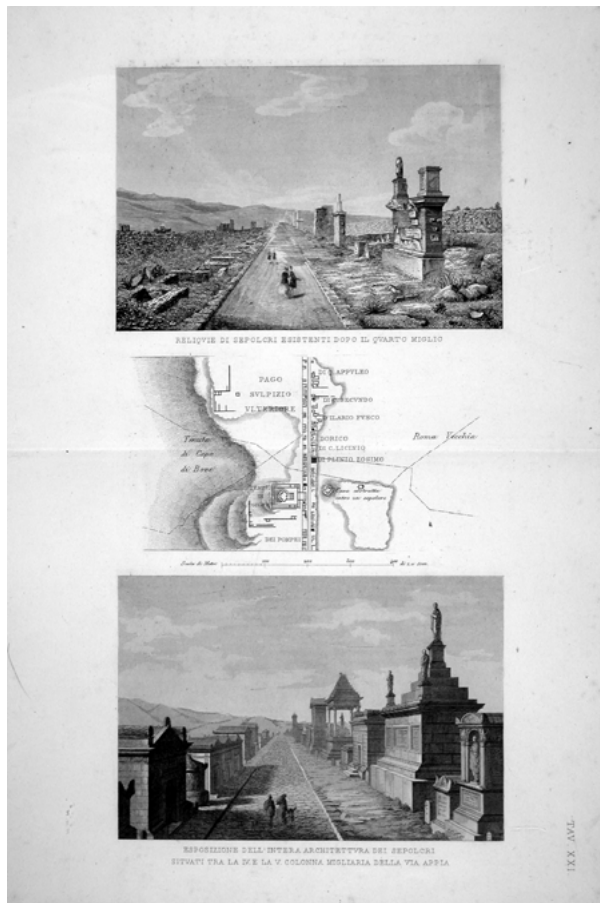


Fig. 2 Via Appia open air museum, as organised by L. Canina (upper image); Via Appia as it was in antiquity with the original funerary monuments (Canina 1853, Tav XXI)

A direct effect of his denunciations, of the attention on behalf of public administration and of the significant commitment of civil society with the "Italia Nostra" association in the front line, was the provision in Rome's master plan of 1965 for the complete protection of the whole area of the Appia, as a public park for the enjoyment of the community.

Notwithstanding, and despite the constraints put in place to safeguard this archaeological and landscape heritage, illegal construction continued, becoming so brazen and difficult to counteract, in the face of an extraordinary commitment by the Superintendence, that it could only be defeated by a strong political will.

Among other things one of the consequences of the failure to implement the designation as a public park was that numerous monuments of very great importance remained in private hands, and in fact so far only a minimal percentage of these have become public property (including some fifty hectares handed over to the State along with the road itself, the Villa dei Quintili, Villa di Sette Bassi and other smaller complexes, and about 140 hectares of the Rome municipal area).

Despite the great difficulty of operating in such a critical situation, within a few years wherever it was possible to intervene (with excellent methodologies in research, restoration, and enhancement) it was demonstrated that it is possible to recover this heritage and make it available for public enjoyment, based on a knowledge process, and extrapolating the results obtained as a model to be used on a wider scale in order to guarantee the preservation of the monuments and what still remains of the countryside, with the aim to emphasise the continuity with the city and to affirm the social role that Appia may have.

THE WORK OF THE ARCHAEOLOGICAL SUPERINTENDENCY OF ROME

For approximately the past 20 years the Archaeological Superintendence of Rome (whose competencies for the Appia have now been transferred to the "Appia Antica Archeological Park") has worked to apply an attentive form of safeguarding with the aim of conserving the historic and topographical ensemble as a cultural asset and entrusting it to a culturally modern role whilst at the same time promoting a general plan for cultural heritage conservation and its increase following a programme of research, interventions, projects, and acquisitions directed towards a form of planning based on the specific characteristics of this particular place, aiming to its gradual recovery in order to define it as a space of public enjoyment.

The objectives that have been achieved as a result of the excavations, restorations, the new arrangements for exhibiting them, and the sites that were acquired - with considerable effort - from their private owners, indicate the road that can be taken via knowledge-gathering and projects that guide the decision-making, introducing methodologies for a type of action that goes beyond 'fencing off' monuments while promoting the conservation and coexistence of ancient Roman remains

with the heritage of different historic periods, which by now have become integral parts of Appia's story. Only in this way can the Appia affirm itself as a cultural resource: a continuous workshop for scientific and recreational activities, and an opportunity for civil development.

Let's now turn our attention to some of the most significant examples of this approach, in which the work of recovery involved the full array of excavations, restorations, studies, archival researches, and new arrangements for exhibiting the findings, paying attention to the specific characteristics of the individual places (Paris, De Stefanis 2014).

The complex of the Mausoleum of Cecilia Metella with Palazzo Caetani, the church of San Nicola, and the *castrum*, constructed in 1303 by the Caetani family with the intermediation of Pope Boniface VIII (Benedetto Caetani), was fully recovered by means of excavations and structural consolidation works (Fig. 4) whilst the early twentieth-century displays of findings that had been set up to create a first nucleus for the Appia museum were renewed and extended (Meogrossi 2000, Paris 2000). Today this complex has attained a position that enables it to recount the history of the Appia beginning from the geological era, with the lava dating from approximately 260.000 years ago still visible at the underground levels, through the mediaeval phase of castle building, to the modern period and the nineteenth-century interventions.



Fig. 4 Appia Antica Archaeological Park. The complex of the Mausoleum of Cecilia Metella with the Palazzo Caetani, the church of San Nicola and the *castrum* (Photo: S. Castellani)



Fig. 5 Appia Antica Archaeological Park. Restored surface of stone blocks and footpaths (Photo: S. Castellani)

The road has been set free from the layers of asphalt under which it had been buried and extensive sections of the restored surface of stone blocks have been brought back to light along with the footpaths in a coherent relationship between the road and the lateral strips (Fig. 5).

Going back over the works carried out earlier by Luigi Canina, many of the funerary monuments along the road were restored (Filetici 2000, Filetici, Paris 2017) eliminating the causes of their degradation and intervening to prevent further damage from the effects of weather (Fig. 6).



Fig. 6 Appia Antica Archaeological Park. Restored funerary monument following the approach of L. Canina (Photo: S. Castellani)



Fig. 7 Appia Antica Archaeological Park. Villa dei Quintili restored (Photo: S. Castellani)



Fig. 8 Appia Antica Archaeological Park. The estate of Santa Maria Nova and its country house (Photo: S. Castellani)



Fig. 9 Appia Antica Archaeological Park. The Capo di Bove private villa (Photo: S. Castellani)

The Villa dei Quintili, (Paris 2000a, Paris 2000b) which the State acquired in 1984, was opened to the public after excavation campaigns, restorations, and new

configurations for the spaces and walking routes that rediscover the layout of what was one the largest residence of the *Suburbium* of ancient Rome (Fig. 7). The approximately four hectares of the estate of Santa Maria Nova and its country house were added to the 24 hectares of the Villa dei Quintili site, to which it belonged in Roman times, thus returning to their original form as parts of a single complex (Fig. 8). These significant acquisitions and restorations created new places for visits, nowadays provided with all the necessary services, where the history of the Appia from the Roman period to our times can be followed through the transformation of a site that was formerly the property of the Church, which administered it by giving it in concession to noble families.

In 2002 the Capo di Bove private villa, not far from the Mausoleum of Cecilia Metella, was acquired. It derived its name from the vast estate that was so called because of the ox skulls that decorated the frieze on the mausoleum (Fig. 9). A history that had been cancelled out, because of the use of the building and its garden as a residence, has now re-emerged in an unexpected way and is providing us with significant new information about the topography of the site. The place has been suitably arranged for public use and it is hosting cultural events and exhibitions about the history of conservation of the Appia. The archive and library of Antonio Cederna, donated by his family to the State, is also hosted there, as a source for research and inspiration. (Paris, Mazzotta et al. 2013; Paris, De Stefanis 2014)

RECENT DEVELOPMENTS

Only gradual, tireless activity of this kind can help to remedy the errors of the past and to heal, in an innovative way, so many wounds (Filetici, Paris 2017).

But this heritage in its entirety will only be saved by a significant project for the planned maintenance of the monuments, the arboreal heritage and the landscape as an ensemble. This is the only receipt we consider appropriate after all the special interventions done – and that still continue – outlining the mode and specificity of conservation works and introducing new methodologies. We are continuing to work, in the same direction we had taken over these past years, within the idea of a workshop and of a system of care for this heritage that has to continue growing with the acquisition of significant monuments that are still privately owned. At the same time the centuries-old history of the Appia must be communicated to the public and recounted by exhibitions of photographs, film making and by digital applications that help visitors to observe and learn. Well maintained, these places will be open to numerous opportunities, as in the case of the creation of the Giardino dei Patriarchi d'Italia at the Villa dei Quintili. Collaborations with Italian and foreign institutions, universities, schools, and associations have given life to a participation that we believe is the correct way to manage this heritage and keep it alive (Paris 2011).

So in the third millennium the Via Appia aims to become a place where new forms of conservation and management of cultural and landscape heritage can be tested and where new projects associated with the civil progress of the city and the quality of life of its citizens, are coming to life. This extraordinary space is a true challenge for Rome as an opportunity to grow and open into a new phase as an archaeological site of primary importance: a paradigm for the environment and culture from ancient Roman and Christian times up to nowadays, and a space for community enjoyment.

In order to begin implementing this plan for the Appia it will be necessary work gradually, with the acquisition of the most important monuments and complexes whilst caring for the heritage and creating visitor routes that offer different stops among monuments and sites considered as places in which to acquire knowledge, spaces for recreation, refreshment, or for exhibitions based on the specific characteristics of each site. The Appia must continue to be a special place of learning for schools, universities, and scholars of different disciplines. There is also work to be done to improve accessibility from all different parts of the city by increasing public transport and reducing the amount of private traffic that is allowed to pass through the area.

Antonio Cederna (Antonelli Carandini, Mannucci 2008) has left us a modern and necessary guide, and our way of seeing the city and the Appia is the same as that indicated by the late Italo Insolera, who saw that the Appia had immense potential on condition that it was appropriately reorganised. For Insolera the Appia was so important for modernity and the future that, beyond the errors and the speculation, he considered it the “backbone” of the city’s new structure with the ability to constitute the authentic “future Rome” (Insolera 2011).

Following the recent reform of MiBACT (see Introduction of this volume) the Appia is now an Archaeological Park. A new institution with special autonomy, led by a Director appointed by international competition, was created by Ministerial Decrees on 23 January 2016 and 9 April 2016. The Park extends from the Aurelian walls to Marino (in the locality of Frattocchie), between the Via Ardeatina, the Via Appia Nuova and the Via Tuscolana, with the Valle della Caffarella and the Tenuta di Tor Marancia. The State-owned monuments and sites have been assigned to the Park¹.

The Park Director performs the functions assigned to the Superintendents for Archaeology, the Arts, and the Landscape within the boundaries of competence of the role and in the assigned institutions, places, buildings, and complexes. The Park Director is also responsible for the project to enhance the entire consular road, and

1 The State-owned part of the Via Appia along with the associated monuments and mausoleums (Rome, Ciampino, Marino) are: The Aqueducts of Acqua Marcia, Acqua Claudia, and Anio Novus; The Aqueduct of the Quintili; The Antiquarium di Lucrezia Romana; The Mausoleum of Cecilia Metella; Capo di Bove – Rome; The Parco della Via Latina; The Torre del Fiscale; Villa dei Quintili - Santa Maria Nova; Villa dei Sette Bassi – Rome.

coordinates all initiatives relating to the Via Appia Antica throughout the country. Since February 2017 the undersigned has been nominated Director of the Appia Antica Archaeological Park.

BIBLIOGRAPHICAL REFERENCES

- Antonelli Carandini M., Mannucci V. eds (2008), *Antonio Cederna archeologo, giornalista, uomo, poeta. Scritti per Roma*, Roma.
- Calzolari V. (1990), "Progetti e prospettive per il Parco dell'Appia Antica", in *Quaderni di Archeologia Etrusco Italica*, 18, pp. 145-153.
- Canina L.(1853), *La prima parte della Via Appia dalla Porta Capena a Boville*, Roma.
- Capobianco V. (2010), *La zona Monumentale riservata*, in *Il primo miglio della Via Appia a Roma*, Atti della giornata di studio (Roma, Museo Nazionale Romano, 16 giugno 2009), a cura di D. Manacorda e R. Santangeli Valenzani, Roma, pp. 11-21.
- Cederna A. (1997), *Storia moderna dell'Appia Antica. 1950-1996: dai gangster dell'Appia al parco di carta*, a cura di G. Cederna, Bologna.
- Cederna A. (2006), *I vandali in casa. Cinquant'anni dopo*, a cura di F. Erban, Roma-Bari.
- Cirone D. (2000), *Valle della Caffarella. Scavi della Torre Valca, al Colombario Costantiniano e al Ninfeo di Egeria*, in *Archeologia e Giubileo, Gli interventi a Roma e nel Lazio nel Piano per il Grande Giubileo del 2000*, Vol. I, Napoli.
- Filetici M.G. (2000), *Conservazione di otto piccoli sepolcri e ritrovamento di un colombario*, in *Archeologia e Giubileo, Gli interventi a Roma e nel Lazio nel Piano per il Grande Giubileo del 2000*, Vol. I, Napoli.
- Filetici M. G., Paris R. (2017), *L'Appia: progetti e realizzazioni*, in *Via Appia. I disegni degli architetti* a cura di M. M. Segarra Lunares, Milano, pp. 16-33.
- Insolera I. (2011) *Roma Moderna. Da Napoleone I al XXI secolo*, Torino.
- Le Pera Buranelli S., Turchetti R., eds (2003), *Sulla Via Appia da Roma a Brindisi. Le fotografie di Thomas Asbhy 1891-1925*.
- Meogrossi P. (2000), *Supporti documentari dell'Appia Antica: il Castello Caetani e la cartografia georiferita della Villa dei Quintili*, in *Archeologia e Giubileo, Gli interventi a Roma e nel Lazio nel Piano per il Grande Giubileo del 2000*, Vol. I, Napoli.
- Muñoz A (1913), "Restauri e nuove indagini su alcuni monumenti della via Appia", in *Bullettino della Commissione Archeologica Comunale*, XLI, pp. 3-21.
- Paris R. (2000), *Mausoleo di Cecilia Metella e Castrum Caetani*, in *Archeologia e Giubileo, Gli interventi a Roma e nel Lazio nel Piano per il Grande Giubileo del 2000*, Vol. I, Napoli.

- Paris R. (2000a), *Villa dei Quintili*, in *Archeologia e Giubileo, Gli interventi a Roma e nel Lazio nel Piano per il Grande Giubileo del 2000*, Vol. I, Napoli.
- Paris R. ed (2000b), *Via Appia. La Villa dei Quintili*, Milano
- Paris R. ed. (2011), *La Via Appia, il bianco e il nero di un patrimonio italiano*, Exhibition catalogue (Rome, 23 June -11 December 2011), Milano.
- Paris R., Mazzotta B., Naccarato M. (2013), "Via Appia Antica. Il nuovo sito archeologico di Capo di Bove e il Triopio di Erode Attico", in *Römische Mitteilungen*, 119, pp. 275-331.
- Paris R., De Stefanis C. ed. (2014) *Via Appia. Cecilia Metella, Castrum Caetani, Capo di Bove*, Milano.
- Tomassetti G. (1910), *La campagna romana, antica medioevale e moderna*, Roma.

WEBSITES

- www.parcoarcheologicoappiaantica.it
- www.archiviocederna.it

PAST AND FUTURE RESTORATION ALONG THE ROUTE OF THE *APPIA REGINA VIARUM*

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Keywords: Via Appia antica restoration project, methodology, seismic improvement, experimentation, enhancement.

ABSTRACT

The Via Appia, today, presents many extreme aspects, from unspoilt territories of marvellous beauty to areas profoundly harmed by illegal construction and long periods of neglect. The intention of the “*Appia Regina Viarum*” project, implemented by MiBACT, is to promote a multidisciplinary plan that will re-launch the route and enhance awareness of its historic and artistic values.

Restoration, thanks to our current scientific knowledge, along with the new materials and the conservation research carried out to assess the compatibility of the products used, is at the centre of the new horizons that the conservation and development works for world heritage should undertake.

“Appia Workshop” constitutes, after 30 years of activity, a valid model of multidisciplinary proposals and of specific methodologies based on long term interdisciplinary research. And in the specific case of the “*Appia Regina Viarum*” project it will enable us to realize a new model of “walking itinerary” in which the development of compatible models will contribute to the growth of an inclusive and more culturally oriented tourism.

INTRODUCTION

The complexity of the Via Appia is inseparable from its beauty. Our task is to protect and conserve it, enhancing our knowledge of it. Over the centuries people, goods, and militias coming from far away have travelled along the Via Appia, and still today the architectural and monumental complexes that established themselves

over those centuries, in surroundings of such rare beauty, are a unique historic heritage of nature and landscapes that offers us ever-changing, fascinating panoramas which alas, in too many cases, had become devastated by degradation and illegal building.

The Via Appia takes a route that follows the morphology and contours of the territories through which it passes; at times it is paved with blocks of flint bedded on layers of smaller stones that gradually decrease in size to drain away rainwater. As a vital artery for commerce, troop movements, and people, this surface was constructed with the utmost care and expertise and its efficiency had to be ensured by constant careful maintenance, to prevent any interruptions of traffic. The road was not always surfaced with blocks of flint; in some places the finish was glareate (a loose mix of small stones) or simply rammed earth. Over time some parts of the original roadway, some of them of considerable length, had been forgotten and replaced by busy modern roads on which it is now impossible to walk without risking one's life.

In parallel with this gradual abandonment, which over a long period resulted in a number of very badly degraded situations, there were cases of illegal construction, some of them very serious. For those reasons the wide-ranging action that the General Secretariat of MiBACT¹ has begun, working with the local regional governments and official agencies, to restore this historic road and enhance its appreciation will lead to a significant re-launch of the Via Appia.

On 8 September 1953 the journalist, environmentalist, politician, and intellectual Antonio Cederna² wrote in the daily newspaper "Il Mondo":

"For its entire length, and for a width of a kilometre or more on either side, Via Appia was a unique monument to be religiously kept intact because of its history and its legends, its ruins and its trees, its countryside and its landscape, its beauty, its solitude, its silence, its light, its dawns and its sunsets ..."

Alas, the Via Appia had not escaped the very serious vandalism and widespread illegal building that devastated it in significant parts along with its adjacent areas, its ancient monuments, historic towns, and settlements; but now there is an opportunity to implement specific projects able to re-qualify them. The causes of the degradation can be only partly attributed to the lack of financial resources. The devastating impact of a superficial culture did the rest. A recovery project is instead solidly based on the knowledge of the territory, of the monuments and their history.

1 MiBACT General Secretariat, Service II. Register of Decrees 12/01/2018 N°3 Implementation of works "Appia Regina Viarum". Resources: CIPE Decision 3/2016. Nomination of the working group. Maria Grazia Filetici: collaborating architect for the design aspects of Service II of the General Secretariat.

2 The family of Antonio Cederna donated his archive to the *Colosseum Archaeological Park*. Restored by Rita Paris and Piero Meogrossi, it is kept at the *Appia Study Centre* at Villa Capodi Bove.

This strategic programme will mark the beginning of a new “path to redemption” for the Appia that will put it on the same level as Europe’s other great historic cultural routes. The relationship between landscape, nature, fauna, monuments, and historic infrastructure will become the core around which a new model of compatible and inclusive tourism will be developed useful for the growth and promotion of local communities.

Respecting local characteristics and existing diversities, the restoration programme will support uniform methodologies for intervention covering the entire length of the Via Appia from Rome to Brindisi. A “Code of Practice” will describe the techniques and materials to be used for all conservation works of the various parts of the ancient road and of the different types of paving (glareate, stone blocks, rammed earth, etc).

At the time of its construction the Via Appia was an important economic investment, perfectly built to ensure its durability, efficiency, and resistance to weather over the long term. Coordinated by a rigorous command structure, a large workforce staked out the route, selected the materials, prepared the base layers and laid the finish.

Along the sides of the road were kerbstones indicating the width of the carriageway and marking out buffer zones that helped to indicate the direction of travel; many of these are missing today and will be replaced to make a continuous line once again. At places where the edges of the road have become buried or have been hidden under the spontaneous vegetation, local archaeological investigations will be carried out to establish where the original sides of the road were. The new replacement parts will be made from materials that are compatible with those pre-existing.

Particular care will be required to reinstate the channels that collected rainwater and conveyed it away from the road surface; their slopes must be checked and corrected as necessary to prevent the formation of puddles, which caused much of the damage and degradation in the past.

These new models for developing a sustainable form of tourism are a marriage between economic progress, social cohesion, and environmental safeguarding which by promoting localised growth, ascribes a strategic role to the quality of life. With that in mind there are some issues that cannot be ignored in order to make this tourist offer accessible, as an indispensable factor for promoting the full participation of everyone, residents and tourists alike, in their free-time, recreational and cultural pursuits. In the strategic programme, therefore, special though will be given to these new models of development with respect to ethical requirements for inclusion and participation, such as the needs of disabled tourists, who must be considered on the same basis as everyone else. Design research will respond to these requirements with appropriate projects that help to disseminate an authentic culture of receptiveness that improves local quality and tourist offer, both public and private, obtaining significant side effects both in economic terms and regarding the quality of life.

THE RESTORATION IN THE ROMAN PART OF APPIA ANTICA: A RESEARCH AND ACTIVE CONSERVATION PROCESS

The restoration plan realised since 1990s by the Archaeological Superintendence of Rome, and still ongoing, includes many intervention themes based on a multidisciplinary approach linked to an extensive historic, artistic and experimental research.

In order to safeguard and conserve the vast historic heritage of the Via Appia, MiBACT, attached major significance to the public acquisition of various important monumental architectural sites, formerly privately owned, which today have been restored and are part of the Appia Antica Archaeological Park.



Fig. 1 The *frigidarium* of the Villa dei Quintili (Photo: L. Filetici 2018)

Villa dei Quintili stands at the fifth Roman Mile of the Via Appia and was one of the most important suburban villas in the Roman countryside. The property was acquired by the State in 1985 and opened to the public in 2000³. Thanks to the continuing archaeological excavations and restoration work (Fig. 1), the public can now enjoy an important visitor route that connects the two fronts: one facing the Via

3 Rita Paris directed the restoration of 2000 for the archaeological part and architect Piero Meogrossi supervised the architectural works.

Appia Nuova with the other overlooking the Via Appia Antica, where a monumental gateway acts as the entrance to the property of the Quintili. Seen from the road, this provides a grand monumental backdrop overlooking the great Nymphaeum⁴, which has now been restored.

Roman baths dating back to the second century B.C. were discovered at Capo di Bove⁵; Antonio Cederna's private archive, donated by his family, is kept here at the Centro Studi Antonio Cederna, along with a centre of documentation about the Via Appia.

The Church of San Nicola nel Castrum Caetani was restored by the author⁶ (Filetici, Paris et al. 2007) within the restoration programme of the Archaeological Superintendency of Rome. The internal surfaces of the walls of the church had originally been built from blocks of tuff using the so-called "*opus saracinescum*" technique. Before restoration, there were extensive areas of decohesion caused by rainwater that has been running down the walls ever since the roof was removed at the end of the 19th century to prevent the building from being used by tramps and robbers. Restoration of the tuff surfaces at these points consolidated the stonework whilst the creation of new channels and other works helped to drain away the rainwater, but if this restored masonry is to be adequately protected, a new roof will be required.

The new lighting design, which won the 2017 IES Illumination Award of Merit, offers visitors and passers-by a new view of this marvellous architecture, thanks also to the newly re-opened entrance, which had previously been walled up because of structural problems, and to the equally new structural consolidation of the bell tower, which had been very badly fissured (Fig. 2).

4 Restoration, M. G. Filetici; excavations and research, R. Paris, with C. Lalli, C. Celia, R. Frontoni, and C. Tagliapietra, 2009-2013.

5 Acquired in 2002 by the Ministry of Cultural Heritage and Activities, and restored by the architect. Piero Meogrossi

6 Project and works supervision, M. G. Filetici; archaeological direction, R. Paris, assistant L. Giammichele; structural consultancy C. Baggio; specialist restorations, F. Jatta and L. Cibrario; lighting project M. Baldieri.



Fig. 2 San Nicola nel Castrum Caetani after completion of the restoration, with the new lighting by M. Baldieri (Photo: L. Filetici 2018)

The marvellous country house of Santa Maria Nova (Fig. 3) was acquired by the Italian State in 2006. After the administrative procedures had been patiently completed⁷ it was at last liberated from the illegal buildings that had mortified it and reduced it to a state of profound degradation. Restoring it was a major task that had to take account of a great many conservation aspects: from the hydraulic project that brought the stagnating water features back into use, the reinstatement works in the botanical parks, the anti-seismic aspects, and new internal arrangements that fully recovered the surfaces of the ancient stone masonry. This work of restoring Santa Maria Nova incorporated all the complexities of conservation, and emphasised the strength of taking a multidisciplinary approach: an expression of the multidisciplinary activities of a large restoration team whose commitment to its task became ever more grandiose the more deeply it worked its way into the substance of the ancient architectural remains.

7 Conducted by Rita Paris, Antonella Rotondi, and Livia Giammichele on behalf of the Rome Archaeological Superintendency.



Fig. 3 Santa Maria Nova (Photo: S. Belotti 2017)

Santa Maria Nova will be the entrance from the Appia Antica into the large Villa dei Quintili estate, where there will be spaces to welcome the public, visiting the baths, the gymnasia where very beautiful mosaics of gladiators were found, the medieval cloister where Olivetan monks used to cultivate their gardens and medicinal plants, and the large country house itself, where we restored the ancient brick walls and precious tower, now made all the more outstanding thanks to our full recovery of the white and red chequerboard patterning that dates back to mediaeval times⁸.

The structural consolidation works to the Villa consisted of carrying out anti-seismic improvements to the masonry structure, increasing its load-bearing capacity and making it more cohesive with the assistance of mechanical means (flat tie rods and bars) to improve its earthquake resistance in specific locations. The timber roof trusses and secondary structure, made from chestnut wood, were fixed reciprocally to the masonry, thereby making it unnecessary to insert reinforced concrete ring beams; the flat tensioning bars, wall openings, and vaults were also renewed. It was decided

8 Restoration works to the tower, Vazio s. a. s; building services design, L. Argentieri, Orel; lighting design, M. Baldieri; water reclamation project studio Massari, E. Codacci Pisanelli; security, P. Quagliana; surveys, MCM studio, S. Belotti; structural design, G. Carluccio; architectural and restoration design, M. G. Filetici; accounting, P. Piazzolla; archaeological excavations, R. Frontoni, R. Paris.

to reuse traditional materials to bring this very extensive restoration project to completion using different techniques in a balanced way.

The lower part of the Villa was consolidated and a new external steel staircase, designed structurally in such a way as to minimise its impact, was attached to the main facade in a position that corresponds to that of an historic masonry ramp that no longer exists, but of which traces remain on the elevation.

At the end of June 2018 the Villa of Quintili estate, no longer occupied by the Olivetan monks, will be handed back to the public, offering an inedited concept of restoration combining the new and the ancient as an expression of the delicacy described by the restoration engineer Antonino Giuffrè:

“As we approach closely to these ancient stones as a doctor would come close to an invalid, we discover an appearance that leaves us disconcerted. Their materiality, in fact; the sign of the hands that placed them in that admirable way and the commitment of those who first laid them out in their complex equilibrium, but above all we discover that we have an obligation, today, to open a dialogue with that genius, and to place our hands where those other hands were once placed” (Giuffrè 1984, p.120)

Between 1998 and 1999, our restoration of the eight tombs -- restored in 1853, by the Turin architect Luigi Canina, that were situated between Roman Miles IV and V of the Appia road -- meant that we had to revisit his architectural idea (Filetici, Paris 2017). His innovative proposal for an open-air museum is still today very topical. Travelling along the ancient road by horse-drawn carriages, 19th-century visitors were able to view the archaeological findings where he had reassembled and mounted them on the facades of the buildings, preserving them *in situ* in a way that would also make them difficult to steal. Canina’s intuition represents a very modern understanding of a cultural route, because through the restoration of its monuments becomes a museum in itself. It is on the interpretation of the protection and conservation approach, that Canina expressed in a modern and creative form -- an idea that was greeted by a great public appreciation of his contemporaries – that we concentrated our study.

When it came to our restoration of Canina’s work we closely followed his documentation and the extremely accurate surveys he had carried out at the time, with a study we undertook at the National Archives of Turin, where these sources are deposited. These documents faithfully reported the topographical positions in which each finding was discovered, itemising them one by one in notebooks, for each side of the road.

In 1998, working with the University of Ferrara, 3D reconstruction drawings were prepared of these eight tombs (Fig. 4). After making an assessment *in situ* of the current state of conservation of the findings that Canina had selected, they were put back in place (Filetici, Pasquali 2000). We substituted the stolen pieces placing in the spaces left empty slabs of line-chiselled travertine. After cleaning and protecting the

surfaces of the eight tombs, we erected a stone sign on each one bearing its name and the date on which its restoration was completed.



Fig. 4 3D reconstruction of the tomb of Hilarus Fuscus (University of Ferrara School of Architecture 2000)

Thus, it can be said that this was a *restoration of a restoration* to which the technical knowledge of today was applied to preserve Canina's open-air museum and his farsighted "compositional" approach to the protection of monuments.

In carrying it out we developed a new dialogue between archival work, restoration, historical research, and the existing architecture in a holistic approach that we decided to dedicate to the late Paolo Mora in the hope that our restoration of a restoration may offer useful suggestions for the discipline and for other future restoration work on the Via Appia.

At Casal Rotondo, Canina created a wonderful work by erecting an undulating surface of brick masonry on which he displayed curvilinear marble blocks from the nearby tomb⁹ (Fig. 5).



Fig. 5 The undulating brick backdrop at Casal Rotondo, created by L. Canina (Photo: G. Carpi- gnoli 2018)

In the vast panorama of the conservation of ancient heritage, Canina's project was a masterpiece of design that clarifies, without hesitation, how an architectural project can resolve specific problems in great panorama of heritage conservation and can, therefore, be taken as a significant example from which to learn in carrying out today's more extensive upgrading programme for the "*Appia Regina Viarum*" project.

9 The idea of the monumental backdrop displaying archaeological findings was carried out by Antonio Canova at the tomb of Marco Servio Quarto at the IV Roman Mile in the proximity of Capo di Bove.

Referring to Canina’s published works we redesigned a travertine milestone to be positioned near the eight restored tombs, bearing the names of the monuments and their date of restoration. This milestone (Fig. 6) was selected as a sign for the walking trail of the “*Appia Regina Viarum*” project¹⁰.

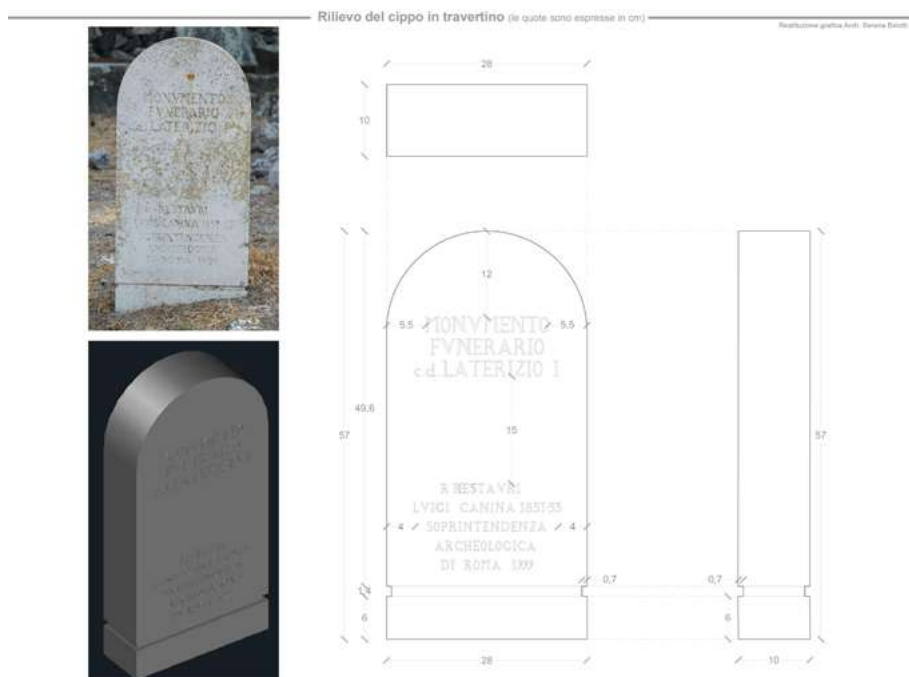


Fig. 6 Appia project, milestone, by M.G. Filetici (Graphics: S. Belotti 2017)

In light of the wide range of our experiences described here, we do not believe that ancient heritage can be restored according to standardised practices; instead we would emphasise that proceeding on a case-by-case basis is more suitable considering the multiplicity and variety of this great monumental heritage.

Our decision to use compatible materials and traditional techniques has confirmed itself as the most suitable direction in which restoration should proceed in order to avoid modifying the construction equilibrium of a building or its structural typology. In fact, if the state of conservation of any ancient monument or building is to be correctly understood, it is essential to reconstruct the history of how it was transformed over time, and the impact of those alterations on its general stability.

10 For more information on the walking trail of the “*Appia Regina Viarum*” project, see the contribution of Biallo, Scaroina, Silvagni, in this present volume.

At the Tomb of Gallienus (Fig. 7) we reconstructed the barrel vaults at the lower level re-establishing the group of masonry that was missing and the support for the structural masses above, which previous collapses had left unsupported.



Fig. 7 The so-called Tomb of Gallienus. Reconstruction of the vaults and seismic improvement restoration works, carried out by Ettore Palmucci. Project by M.G. Filetici and C. Baggio, 2016 (Photo: S. Belotti 2017)

The roof of the columbarium in the so-called “sepulcro a staffa” tomb, where terracotta cinerary urns and floor mosaics are still preserved *in situ*, was restored.

In the octagonal tomb (Fig. 8) on the opposite side of the road, at the great Nymphaeum of the Quintili Villa, portions of the vaults were reconstructed to support the *cementitio* conglomerate masonry, which had been left without adequate support and was found to be in a dangerous condition. The ancient internal spiral

staircase in *opus reticulatum* was completed and confirmed in its load-bearing function for the structure surrounding it.



Fig. 8 The so-called octagonal tomb after restoration by M. G. Filetici (Photo by the author 2016)

The original external finish of many of the tombs has long been lost, leaving the underlying surface in *cementitio* permanently and irreparably exposed to: wind from the north-east, humidity that is carried from the sea in the west, the changing weather conditions, the growth cycles of the plants, and to the dangers caused by drought or sudden heavy rain. Essential works were, therefore, undertaken to ensure that the exteriors are all correctly conserved in the future by botanically verifying the plant types growing around them and making their rainwater disposal systems effective.

One of the key elements of the Via Appia restoration was to ensure that a careful programme of ordinary planned maintenance will be carried out (Alberti, Filetici et al. 2005). For that purpose we prepared an extensive maintenance project, already tested over a number of years, based on cataloguing the artefacts subdivided by size, masonry type, priority, level of risk, etc. On the basis of necessity are settled the frequency of the interventions, the methods for carrying them out, the techniques to be used, and their costs. Annually, the Superintendence, besides ensuring ordinary planned maintenance to major architectural complexes and the landscape, it also guarantees specific maintenance to 66 tombs in rotation, based on a priority assessment. Obviously this important and necessary maintenance programme is subordinated to the annual budget.

For more than 25 years the Archaeological Superintendence of Rome has been operating this methodological approach in continuity, not always being able to count on significant financial resources but always on the basis of scientific programmes for intervention. These programmes form part of the general multi-disciplinary plan, which takes as its starting point our studies of the outstanding work of Luigi Canina and makes use of the new scientific and technical restoration knowledge. As a clearly practicable reality for implementation and development, the “Appia Workshop” is representative of that plan.

BIBLIOGRAPHICAL REFERENCES

- Alberti B., Filetici M. G. et al. (2005), La tutela ed il restauro del patrimonio archeologico nel Parco dell’Appia antica, in *Atti del V Convegno Nazionale ARCo*, Roma, pp. 173-182.
- Filetici M. G., Paris R. (2017), *L’Appia: progetti e realizzazioni*, in *Via Appia, i disegni degli architetti*, edited by M. Segarra Lagunes, Milano, pp. 16-33.
- Filetici M. G., Paris R. et al. (2007), *Restauro e miglioramento strutturale del grande ninfeo della Villa dei Quintili sull’Appia Antica*, in *Atti del VI Convegno Nazionale ARCo*, Roma, pp. 646-657.
- Filetici M. G., Pasquali S. (2000), “Via Appia antica in Roma 1851-1999: un percorso tra documenti d’archivio e monumenti attraverso la rappresentazione 3D”, in *Quaderni*, 10, Scuola Normale di Pisa, Centro Ricerche Informatiche Beni Culturali, pp. 183-188.

- Giuffrè A. (1984), *Pietà per i monumenti*, in *Restauro e cemento armato in architettura 2*, edited by G. Carbonara, Al. T. E. C., Roma, pp. 120-123.

THE *VIA APPIA*: A METHODOLOGY OF INTERVENTION FOR A PROTECTION AND ENHANCEMENT PROJECT

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Keywords: Via Appia project, methodology, enhancement and protection

HISTORICAL NOTES

Much has already been written about the importance of the Via Appia in the history of Italy and many studies are still in progress, particularly in relation to those parts of the road that have not yet been definitively identified (Vistoli 2013).

I will restrict myself here to recalling the essential historical facts. The Via Appia was constructed by *Appius Claudius Caecus* 'The Blind' in 312 BC to connect Rome with Capua, the most important city in Campania. The first part of the road was 132 Roman miles long and probably made use of a route that was already in use, the Via Albana. Right from the start it had great political significance, being intended as a response to the plan of gradually expanding the power of Rome into the southern regions of ancient Italy, laying the foundations of the empire. In fact if we go back through the stages by which the Appia was gradually lengthened, we can track the growing subjugation of the territories through which it passed, and how its progress was marked by the gradual deduction of colonies: in 296 BC *Sinuessa* and in 295 BC *Minturnae*, at either end of the Garigliano plain; in 291 BC *Venusia*, located strategically on the border between Irpinia, Lucania and *Apulia*; and in 268 BC *Beneventum*, also located in a key position between Campania and *Apulia*. The road ultimately extended as far as *Tarentum* which, like the whole of Sannio, had already been under the dominion of Rome since 272 BC, with the aim of continuing as far as the bridgehead to the Orient at *Brundisium*, where in fact a colony was deduced between 246 and 243 BC.

When it had fully developed, the *regina viarum*, as the Roman poet Publius Papinius Statius defined it (*Silvae*, II 2,12), had a total length of 364 Roman miles. As the response to a political and military purpose, it made a strong mark on the territories through which it passed, for example by generating urban settlements of which it became the *decumanus maximus*. Very frequently it also became the axis for laying out the centuriation of a territory: the parcelling out of conquered land into lots for assignment to military veterans, in accordance with a consolidated and reliable method for occupying the territories and exercising power (Fig. 1).



Fig. 1 The centuriation in the Falernus Ager between Carinola and Grazzanise, in Campania

Today the Via Appia still passes through some modern urban centres that progressively developed via a process of gradual stratification, constructed on the remains of more ancient places. Where the present-day Via Appia passes through the

town of Santa Maria Capua Vetere, a settlement that grew up on the site of ancient *Casilinum*, it coincides with the alignment of the Roman road. The southern entrance to the town (Fig. 2) was flanked by mausoleums, whilst in the north are the remains of a monumental tripartite arched gateway, the so-called Arch of Hadrian (Fig. 3).



Fig. 2 The two mausoleums at the southern entrance to ancient Capua (today Santa Maria Capua Vetere)



Fig.3 The Arch of Hadrian at the northern entrance to ancient Capua (today Santa Maria Capua Vetere)

The Via Appia continued to be used as the main axis around which the historic centre of the town developed; in later times, during the reign of Frederick II (1239), its importance was exalted by the construction of a monumental town entrance (Fig. 4).



Fig. 4 The remains of the monumental entrance to the historic centre of Capua (ancient *Casilinum*)

In the case of Benevento, an urban settlement steadily developed on what had been the urbanised part of the Latin colony of *Beneventum*, whose history was closely connected with the Via Appia; from the very beginning, in fact, the Appia was the backbone for the urban structure of the town. It became one of the strongholds on

the southern frontier that secured Rome's policy of expanding towards the fertile lands of the Daunia. Today, the ancient alignment of the road is still followed by Corso Garibaldi, the main street of the modern town. Ever since the urban configuration of *Beneventum* was first organised around the Via Appia, it has served as a layout within which from time to time, one or another of the sectors has come to assume greater or lesser importance. Even in the Lombard age the original settlement retained its dominance; it grew even stronger in subsequent centuries when it had entered the dominions of the Church and became a very important bishopric.

The Via Appia, or the *regina viarum* (*Silvae* II 2,12: *Appia longarum teritur regina viarum*), and *nobilis* (IV 4,2) as the Roman poet Statius described it, extended for a total length of 364 Roman miles. It was paved in carefully smoothed basalt blocks, was 14 Roman feet i.e. 4.10 m wide, and was flanked by pedestrian footpaths (*crepidines*) with a simple beaten earth surface. Hostels (*mansiones*) at roughly 10-15 mile intervals were interspersed with resting places for changing horses (*mutationes*). The Appia continued to function, over its full length, until at least the 6th century AD, when the abandonment of the plains made the roadway unstable, partly due to barbarian devastations but also, at least in the part nearest to Rome in Latium, to the formation of swamps. It was replaced later by a new Via Appia that took the same route as the Roman road in many parts. Nevertheless the original Via Appia continued to play a fundamentally important role: it was the route taken by pilgrims journeying to the Holy Land; it revealed its military significance during the Crusades; and its role as an intermediary for important cultural exchanges was demonstrated by the oriental influences that can still be found in the religious and urban architecture, where it passed through the southern regions of Italy.

It not only went through periods of despoliation and pillage but also of monumentalisation, most notably at the entrances and exits of towns and cities. In the early nineteenth century when mercantile activity in the southern regions of Italy increased under French rule, there was a need to accelerate transport and trade; a specific decree of Joachim Murat (no. 1753 of 7 May 1813) ordered the whole road network to be reorganised, marking the beginning of a new period during which the Via Appia enjoyed much good fortune, a fortune that increased even more after the Bourbon Restoration.

METHODOLOGICAL ASSUMPTIONS

Thus as can be seen, the Via Appia is a complex asset whose importance resides not only in its stretches of paved road that have remained so admirably well-preserved over time, but also in all the territorial peculiarities that took shape along its linear development as it passed through no fewer than four Italian regions: Lazio, Campania, Basilicata, and Puglia, each of which boasts of its own particular

characteristics of landscape, environment, settlement, nature, monuments, and architecture that differ greatly from those of the others.

Initiating a project to protect, conserve, and enhance such a rich and varied asset required the establishment of a specific database as the first step in the construction of a knowledge plan (Tocco Sciarelli, Franco 2013), to collect the data relating to identification of the route, the solidity of the parts for which evidence already existed, their state of preservation, any measures already in place to safeguard them, any enhancement projects already implemented or planned, the legal status of the remains, and information about the state of preservation of other parts that are known to exist but have not yet been uncovered.

That survey, which was initially carried out on the basis of archive and bibliographical data only, identified about 32 items of evidence relating to the Via Appia in Campania, Basilicata, and Puglia, of which no fewer than 23 are in Campania. The most substantial remaining parts of the road are those that were paved with stone or *glareato* (Fig. 5) or of which only the subfoundation (*rudus*) remains. To these should be added parts of modern urban roads and streets that still follow the historic route, such as (in Campania) Corso Appio in Santa Maria Capua Vetere (Province of Caserta), Via Libertà in Maddaloni (Province of Caserta) (Fig. 6), Via Annunziata Vecchia and Via Napoli in Montesarchio, Corso Dante and Corso Garibaldi in Benevento, and Via delle Puglie in Mirabella Eclano (Province of Avellino). Additionally, numerous monuments or rustic villas and necropolises flanking the route of the ancient road have also been added to the register.



Fig. 5a-b Recent findings at Mirabella Eclano (ancient Aeclanum). A part of Appian street paved in *glareato* and another paved in basalt



Fig. 6 The Via Appia where it passes through the centre of Maddaloni (ancient *Calatia*)

The surviving stone-paved parts have a constant width of 4 metres, whilst the parts with a *glareato* surface are approximately 1m wider. There are limestone *margines* along each side, and *crepidines* pavements with a surface of calcareous pebbles of regular size and shape, which have sometimes been restored using other materials; the road surfaces still bear the continuous ruts left by the wagons as they passed along. The subfoundations are wider and extend for up to 10 metres. At present, almost all of the paved parts, including even fairly extensive parts, that were found during old excavations, or that resulted from emergency explorations or preventative archaeology works carried out for conservation purposes, have been re-interred or are in any case not visible; the only exceptions are the parts that have been left visible in archaeological parks.

The collected data was set out on Excel spreadsheets, based on simplified archiving criteria and divided into sections that can be accessed via a pull-down menu of predetermined selectable items relating to the condition; the degree of risk to which the various parts of the Via Appia and the monuments along the route are exposed; and their enhancement. The database is thus designed for quick and comprehensive consultation, and can frequently be updated. It is complemented by summary information sheets for each site that can be implemented both in the

graphical and photographic documentation, and in the status updates of individual sites. This cataloguing and graphical tool, together with the database, has been merged into a dedicated georeferenced cartographical database for the Via Appia within the *Geo-Cultural HUB* (see the contribution by Biallo, Scaroina, Silvagni in this present volume), a geographical referencing system that MiBACT already uses for all its planning and management work. The purpose of this system is so that information can be rapidly and concisely acquired, and so that all the activities deemed necessary for landscape and environmental protection, conservation, restoration, and upgrading can be identified and programmed. Additionally it can be used to extract any information that is to be made public as part of enhancing appreciation of the Via Appia. Finally, all the knowledge already acquired, including the mapping data, will contribute significantly and decisively to preparing the documentation required for putting forward the Via Appia as a candidate for inscription on the UNESCO World Heritage List.

It must be emphasised that protecting and enhancing the Via Appia does not end with protecting and restoring the ancient roadway itself but (precisely for the reasons we have described) because it was an exceptionally formative and characterising element in the territories through which it passed, and must be treated with particular care when works are being planned to upgrade its urbanised parts or its landscapes. On the one hand the signs and historical evidence must be clearly interpreted, and on the other hand, in relation to the very extensive territories affected, the emphasis must be on quality as part of a vast and far-seeing scenario in which the aim is to re-order the previous works, which were carried out in a fragmented way without any unitary oversight.

It will be the responsibility of the Ministry to provide guidelines for restoring and upgrading these territories and landscapes, and for enhancing their appreciation. Finally we must mention the long walk that was taken by Paolo Rumiz and his collaborators in 2015, along the route of the Via Appia (Rumiz 2016). They should be accorded great credit for the exceptional media interest in the ancient road that they generated, and which also aroused attention, interest, and a sense of pride in the local communities. Wherever possible, the path they took adhered to the original route of the Via Appia; where not, the group took adjacent trails or parts of modern roads. Even though this generated inconsistencies that caused some disturbance in the scientific community, it should be understood that if both the modern pilgrims' way and the ancient route of the Via Appia are valued, each for its own characteristics and peculiarities, both can be of mutual assistance one to the other, contributing to each other's enhancement and contributing together to the recovery of the territory through which they pass.

BIBLIOGRAPHICAL REFERENCES

- Rumiz P. (2016), *Appia*, Milano.
- Statius P. P, *Silvae*, edited by C. E. Newlands, 2011, Boulder.
- Tocco Sciarelli G, Franco M. (2013), *Il progetto della Società Magna Grecia sulla via Appia*, in *La via delle aquile nella terra dei lupi*, edited by C. Grassi, Nusco, pp. 99-115.
- Vistoli F. (2013), *Saggio bibliografico sull'antica via Appia*, Roma.

A TERRITORIAL INFORMATION SYSTEM FOR THE VIA APPIA ANTICA WALKING TRAIL

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Keywords: Via Appia antica walking trail, Territorial Information System

The complexity of implementing a project as ambitious as the Via Appia Antica Walking Trail¹ made it necessary to structure an equally complex data management system which would nevertheless be instantly available for consultation by the many actors who are necessarily involved in the project.

The huge quantity of information collected, parts of which still remain to be collected, is extensive and very heterogeneous because the aspects that have to be considered within such a complex project not only embrace archaeological, historic, artistic, and landscape features, but also all the aspects associated with the continuity of the route and, thus, the one relative to the route's protection, to relevant planning tools, but also the one regarding its enhancement and fruition, directly related to the potential users of the trail. Extremely heterogeneous is also the context in which the trail is developed, in as much as it passes through 4 regions, 12 provinces, and approximately 80 municipalities. Beyond Rome, it encounters medium-sized cities, small villages with just a few inhabitants, degraded peripheries, unspoiled landscapes, individual monuments and entire archaeological sites.

In order to implement the Appia Antica Walking Trail project, the Ministry of Cultural Heritage and Activities- MiBACT considered that it was necessary to be supported by a basis of geographical knowledge, relative not only to the route of the ancient road, but also including other relevant information for its fruition, such as: alternative walking paths, cultural heritage along the route, established stops and accommodation and information regarding the inhabited places through which the road passes and the local administrative competences.

1 The Via Appia Antica Walking Trail is part of the “*Appia Regina Viarum*” project promoted by the MiBACT, General Secretariat, Service II. For further information on the project see D. Di Francesco contribution in the present volume.

A decision was, therefore, taken to adapt to the new needs a tool that had already been used for some years at the Ministry: a web-based regional information system known as the Geo-Cultural Hub. Since this system was already equipped with a geographical base of reference and had useful informational layers, such as the locations of cultural and landscape assets, management of the access points (both reserved and public) and functions for editing and managing financial aspects and research projects, the Ministry managed to make savings in terms of costs, time, developing, and operational readiness.

The Geo-Cultural Hub had been born out of various experiences within the Ministry as a tool for responding to the requirement of relating different information referring to the same "object" present in the territory by using its geographical data. The evolution of information technology allowed for the integration of geographical information in the databases, thus, facilitating the construction of a system that connects information from different sources, by interoperability functions, and enables it to interact with geographical databases outside the Ministry. Since the system could be customised with interfaces, databases, and dedicated functions for particular requirements, a dedicated section for the Trail was quickly generated. The first step was to retrieve the most recent studies on the route of the ancient road, and introduce them into the database. Later was added to the system the GPS route of the stages studied by Riccardo Carnovalini, traversed by Paolo Rumiz and his group and described in his book (Rumiz 2016). To this basic data were added the archaeological assets present along the route, the protected areas, the historic centres and large amount of other information collected by the Ministry from other institutional bodies and the local Superintendences, as well as the one already present in the Geo-Cultural Hub.

The stages along the walking trail of the Appia route were divided into segments, classified by type (sections that still had the original lateral footpaths, sections that had been paved with asphalt, unpaved parts, or parts that are simply rough paths) and on the basis of how safe they are for walking or cycling. Consequently, the unsafe parts were indicated, for which a safer alternative has to be identified or a solution that makes the route more secure has to be developed. Furthermore, all points of dubious safety were identified and photographed in order to position security signs. Finally, since neither the technical cartography of the four regional administrations (Fig. 1), through which the Appia Trail passes, nor the available ortho-images (even when consulted via interoperable access) ensured homogeneity (because were either of different scales or not updated), the Ministry commissioned a specific flight along the Trail (Fig. 2). This made it possible to obtain a geo-topographical database at 1:5000 scale of the whole route and at 1:2000 scale for the zones that will be involved in the new project, plus an ortho-image, a digital model of the terrain, and a digital contour model. All the material produced was created in compliance with the national specifications for these types of geographical data and was incorporated into the Geo-Cultural Hub. The Geo-Cultural Hub made it possible to further

characterise the hypotheses for the walking route and to identify other critical aspects. Using overlay mapping techniques, the regional and municipal administrative limits, used to automatically define the local competences for each section of the route, were also identified more precisely. This information system was conceived not only in order to represent the walking route, but above all as a support tool for the development of the Trail, which necessitates modifications and integrations of the original route in order to make it safe for walking through security interventions and the positioning of appropriate signage and descriptive information boards.



Fig. 1 Aerial view of the city of Benevento, Campania region, early 1940s (Photo RAF)

In brief, this portal brings together most of the copious material that exists on the Via Appia Antica and useful for users, organised on a technological platform as a hub that can read all the information that will be required by anyone planning to undertake the walk along the Appia (Fig. 3). The project of the “Appia Regina Viarum” Walking Trail doesn’t aim to play a scientific role; it uses updated documentation and technologies in order to operate on scientific basis and create a knowledge platform of a high quality. In fact, the intention at the heart of the project is to help users to discover the ancient route of the Via Appia, bringing to light its monuments and

buildings, its history, its administrative subdivisions, and the works, projects, and restorations that have been carried out.



Fig. 2 Benevento, city view from the special flight commissioned by MiBACT for the implementation of the Geo-Cultural Hub (2016)



Fig. 3 Benevento, as represented in the Geo-Cultural Hub indicating the Via Appia Antica Walking Trail through the city (Geo-Cultural Hub 2017)

As soon as the role of the Geo-Cultural Hub has come to an end as an information technology system for designing the route and managing the safety works and signage interventions, it will be used as a geographical and information base for the promotion and enjoyment of the Appia Antica Walking Trail, thereby continuing to play an important role for the knowledge, protection and enhancement of the most famous road of antiquity.

BIBLIOGRAPHICAL REFERENCES

- Rumiz P. (2016) *Appia*, Milano.

PART 4

**RESEARCH AND EVALUATION
OF BIG CULTURAL ROUTES IN CHINA**

CHARACTERISTICS AND REGIONAL DEVELOPMENT STRATEGIES FOR THE GRAND CANAL, FOCUSING ON HISTORICAL TOWNS AND CITIES AT RIVER MOUTH REGIONS

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Keywords: The Grand Canal, regional development, convergence regions

The Grand Canal is the world's earliest and longest artificial river, featuring the largest scale and longest duration of digging. Still in use today, it is a great creation of both artificial and natural efforts and a masterpiece of humankind combining natural, scientific, social, economic, artistic and aesthetic elements.

The Grand Canal was conceived as a unified mean of transportation of interconnected rivers for the first time in the Sui Dynasty (581-618). With development in the Tang (618-907) and Song (960-1279) dynasties, it re-unioned for the second time and became a traffic artery of nearly 2000 kilometers long in the Yuan Dynasty (1271-1368). It skillfully took advantage of the existing natural river systems and linked the Haihe River, the Yellow River, the Huaihe River, the Yangtze River and the Qiantang River from north to south.

Unique cities and towns with rich elements were formed at convergences of sections of the Grand Canal and other rivers. These historical towns and cities are mostly strategically important places with flow of population and goods, convenient transportation conditions and booming commerce. As representative human settlements, they normally have profound and far-reaching influence on the local social life.

DEVELOPMENT OF HISTORICAL TOWNS AND CITIES IN THE CONVERGENCE REGIONS IS A PROCESS OF CONTINUOUS HUMAN-LAND INTERACTION

The Grand Canal is a large-scale water conservancy and habitation project that utilized the natural conditions and continuously renovated the natural environment. The regional development of the Grand Canal is a process of continuous human-land

interaction and evolution. Especially in the regions of river convergence, the Grand Canal utilized natural rivers and lakes to gradually establish and maintain a shipping artery linking the north and the south of China. They reflected the long-term continuous interaction and fusion between humankind and the environment as well as the land use patterns under the interaction of humankind and the nature Fig. 1). They also formed the unique canal cultural landscape.

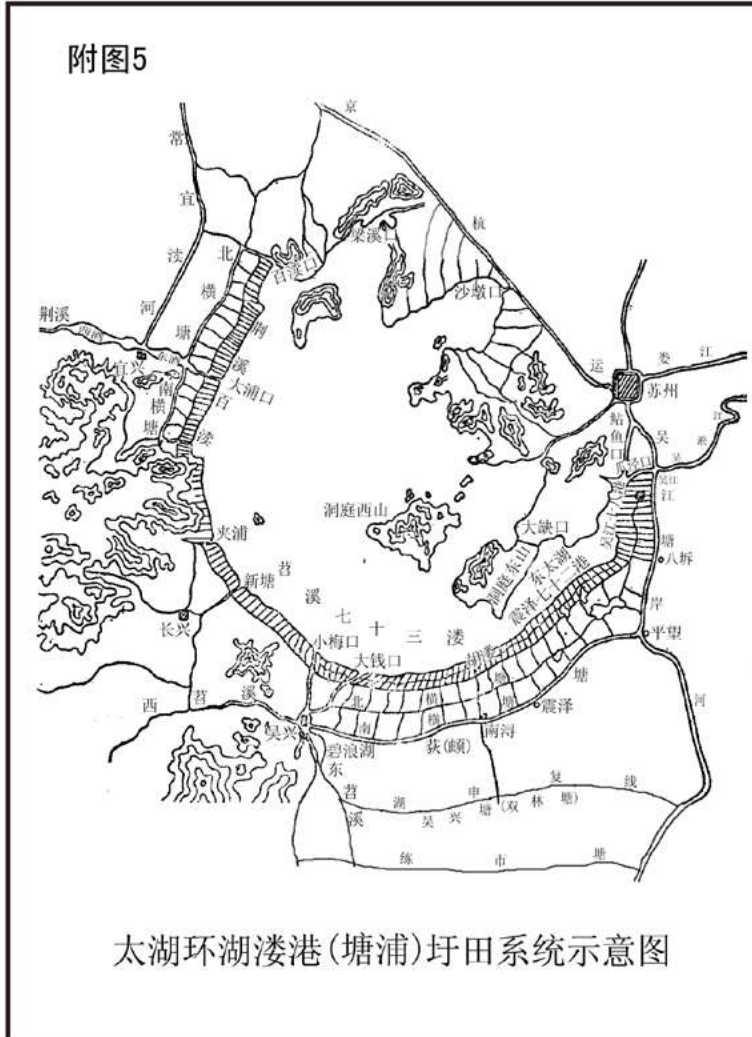


Fig. 1 Map of the channels and polders around the lake Taihu (Huang xuewei: *Planning and comprehensive management of Taihu basin*, Beijing 2000)

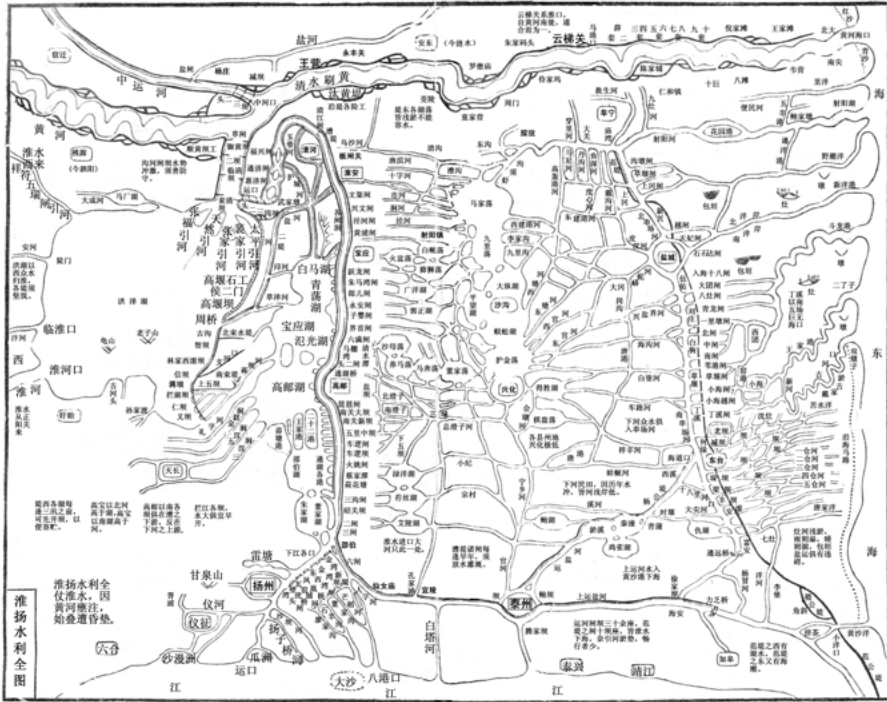


Fig. 2 Map of the Huaiyang Water Conservancy Projects (Feng 1839)

Take the Huaiyang Canal and Jiangnan Canal which feature the most complicated situations of convergence with other water systems for example. Relationship between the Grand Canal and the Yangtze River and other important rivers had been changing almost throughout the human settlements construction of city of Yangzhou and towns in its neighborhood. Changes of the coastline, southward movement of bank line of the Yangtze River, the Yellow River taking the watercourse of Huaihe River to the sea, and development of natural lakes were all important elements affecting the human settlements in Yangzhou¹. The *Map of Huaiyang Water*

1 Notes on *Yangzhou Waterways Preface IV* roughly outlined the dynamic changes of the Canal and the natural environment where the canal runs through. "The river is 360 li away from Huaihe River, Hangou Canal was ditched in the Spring and Autumn Period, channeled in the Han Dynasty; the water was cut off in the Jin Dynasty and dredged in the Sui Dynasty; the canal was created in the Tang Dynasty. Today's canal was not the one in ancient times. Today's canal was finalized by Bai Ang. Basically the ancient canal utilized lakes while today's canal utilized rivers. The ancient canal turned north from Gaoyou Prefecture, today's canal runs through the east channel of the West Lake. The ancient canal was high in the south and

Conservancy Projects (Fig. 2) clearly reflected that as a whole system, the Grand Canal was interconnected and interacted with other elements, forming a integrated living environment.

EVOLUTION OF THE DIVERSITY OF HUMAN SETTLEMENTS IN THE CONVERGENCE REGIONS OF THE GRAND CANAL

At convergences of the Grand Canal and important river systems, important regional cities were normally established. Such regional development strategies were often reflected in the convergence regions of the Grand Canal and its branches, regional rivers, lakes and wetland. The level and prosperity of the cities and towns coincided with the level and functions of the connected waterways.

The development of Yangzhou and its neighborhood, in some sense, was determined by its strategical position at the convergence of the Grand canal and Yangtze River. As "Yangzhou is adjacent to Huaihe River on the north and the sea on the southeast"², it has long been the political and military hub since ancient times³. After the Grand Canal linking the Yangtze River and Huaihe River, Yangzhou became even more strategically important with "numerous passes and developed transportation conditions"⁴. As Yangzhou Canal turned at Shugang and passed south to Zicheng, officials, farmers, artisans and merchants lived by the river. The banks of the canal were developed first, forming new industrial and commercial zones. Inoue Yasushi described the city of Yangzhou in his book *The Roof Tile of Tempyo*: "Looking into

lower in the north and the water was often insufficient; today's canal is high in the north and lower in the south, suffering from discharge of Guabu (Guazhou), Zhuyu Bay and Mangdao River; such change is caused by the terrain changes."

- 2 *Revised Yang-chou chorography*, 1810, or the 15th year under the reign of Emperor Jiaqing of the Qing Dynasty. Volume I.
- 3 Shi Le, Northern Song Dynasty, *Universal Geography of the Taiping Era* [976-983]: Yangzhou measures 225li (112.5km) from east to west and 167li (83.5km) from north to south, and is 1940li (970km) to Dongjing to the northwest, 2700li (1350km) to Chang'an to the northwest, 560li (480km) to the sea to the east, 95li (47.5km) to Taizhou, 30li (15km) to the Yangtze River, 70li (35km) to Runzhou after crossing the river, 200li (100km) to Chuzhou (in today's Anhui province) to the west, 300li (150km) to Chorzhou (in today's Jiangsu province) to the north, 400li (200km) to the sea to the southeast, 80li (40km) to Taizhou county, 360li (180km) to Hezhou to the southwest, 200li (100km) to Sizhou to the northwest, and 360li (180km) to Yancheng county, Taizhou prefecture to the northeast.
- 4 Bao Zhao, Song State of the Southern Dynasty, *Ode to Wucheng*.

In addition to Yangzhou and other metropolises, there were some distinct cities and towns at the convergences of the canal and local rivers. For example, Gaoyou Town under the administration of Yangzhou was established following the digging of Hangou Canal and prospered at the convergence of Hangou and the Salt Shipping River. Till 175BC, the 5th year under the reign of Emperor Wendi of the Han Dynasty, King Liu Bi of Wu dug Hangou Canal to facilitate the salt transportation, thus Gaoyou Salt Shipping River was constructed... the convergence of the two rivers was the seat of Gaoyou. Its contribution to transportation helped formation of the city. Meanwhile, the improvement of water transportation promoted flow of population and goods, driving the city development.” (Chen Wei et al 2013, p. 169).

CONTEMPORARY DEVELOPMENT STRATEGIES TO THE CONVERGENCE REGIONS OF THE GRAND CANAL

Compared with the prosperity of those settlements along the Grand Canal in history, their decline in modern times has become an undeniable fact. After the Grand Canal was inscribed to the World Heritage List, the regional development of the Grand Canal faces great opportunities and challenges. How to make good use of the historical and cultural resources to explore a feasible route for the Grand Canal protection and utilization that meets the actual situation of China, and revitalize the regional development and prosperity of the Grand Canal areas are issues that we should address urgently.

Mr. Wu Liangyong summarized the enormous and far-reaching influence of the renovation of the water environment of the Grand Canal on the living environment of China in his *History of Human Settlements in China*: “Forming the artificial-natural environment with multi-level water conservancy renovation is an important technology and culture of the human settlement construction in ancient times and canals, channels and water networks supported development of human settlements of different sizes. In this process, ancient people recognized that water was not only a physical substance, but the blood of vitality. The water system governance can be described as combing the land texture and construction of human settlements is a part of the new texture, connected with the blood vessels of the land.” (Wu 2013).

Understanding the holistic characteristics of the Grand Canal’s development

Holism of the canal regional development is to regard the human-land interaction and evolution of the Grand Canal as a whole by referring to the historical experiences. The Grand Canal creatively linked the scattered sections of the river dug in different periods into an artificial river under unified construction, maintenance and management. It is a great creation of interaction between humankind

and the nature. The special zones formed at the convergences of the Grand Canal and important river systems are concentrated manifestation of the great deed of human-land interaction.

The canal town clusters and city agglomerations were outstanding representatives of “holism” of the human-land interaction in the human settlements along the Grand Canal. The holism was mainly embodied in the comprehensive land utilization, complicated and diversified functions and liveable environment of human settlements that met overall requirements. Holism is an important part of Wu Liangyong’s sciences of human settlements. He believed “the sciences of human settlements that studies architecture, cities and regions should be considered as a science regarding entirety and holism.” Wu 2001).

Improvement and reconstruction of the cultural strategy of the regional development of the Grand Canal

The Grand Canal is a continuous live system crossing cultural watersheds of different time and space, and an invaluable multi-category resource treasury. The regional development of the Grand Canal has become a new strategy centering on the land and space development, realizing cultural and economic, social and ecological integration and development with the cultural values as core. Combined with major national strategies such as the Beijing-Tianjin-Hebei Coordinated Development Strategy and the Yangtze River Economic Belt, Chinese Civilization Inheritance and Innovation Zone and the Belt and Road Initiative, the Grand Canal Cultural Zone Rehabilitation is a national-level strategic move, a representation based on the cultural awareness and culture self-confidence and recognition of the rivers and mountains of China based on the cultural relics protection.

RESOURCES CONTINUITY AND ENHANCEMENT OF THE REGIONAL DEVELOPMENT OF THE GRAND CANAL

Enhancing the dynamic river network structure

When dealing with the relationship between the artificial river and other rivers, the Grand Canal has created a vast canal network, showcased great achievements and creation spirit of the Chinese people in ancient times in utilizing both the natural and artificial efforts in the construction of water conservancy projects. This whole system of human-land interaction is one of the most important characteristics of the regional development pattern of the Grand Canal.

The Grand Canal water network relationship features a well-defined hierarchy. When developing and renovating the dense river systems, the Grand Canal gradually formed a hierarchical river network according to the importance of intersecting

rivers with the Grand Canal. The cities and towns along the Grand Canal were developing by following the characteristics of the local river network. Meanwhile, the arrangement of human settlements, streets and buildings was deeply affected by the river network structure.

Integrating waterside resources of the Grand Canal

The regional development of the Grand Canal depended on a variety of waterside resources that were closely related to the Grand Canal. The heritage resources were diversified, including waterways, lakes, ancient bridges, valves, dikes and other water conservancy facilities and famous cities, towns and villages, ancient buildings and ancient sites that are related to the Grand Canal, complicated natural and geographic environment and cultural and social environment. The drainage area of the Grand Canal contained important cultural resources of China, and multiple attributes such as historical canal, cultural relics, cultural route, linear cultural landscape, and cultural relics protection site. It can be interpreted in an all-round way.

Waterside resources with the Grand Canal as core formed unique settlement patterns in the land use, building density and river transportation and so on. Cities and towns were formed by the canal, with hydrophilous dimensions and agreeable scale, and grew with changes of the canal network. The commerce and lifestyle along the canal had great vitality and attraction, causing construction of shops and residences along the artificial river. The settlements "taking into consideration of both public and private interests" were the mainstream lifestyle at the convergences of the Grand Canal.

Reshaping the canal convergence nodes

The Grand Canal is a huge state-level water conservancy project and the canal engineering hubs were the most important nodes of the regional development system. Development of the Grand Canal in modern times should fully recognize the attribute of the Grand Canal projects, make use of the outstanding engineering values of the canal, and give full play to the driving force of the engineering hubs to reshape the regional nodes of the Grand Canal.

In contemporary society, the functional requirements of the Grand Canal have experienced fundamental changes and their continuity has been weakened. Under such conditions, efforts have been made to explore functions compatible to the contemporary society and economy, remould new trigger points of the canal convergences centering on the new functions by linking the important engineering hubs of the Grand Canal and with functionality of such hubs as the driving force.

BIBLIOGRAPHICAL REFERENCES

- Chen Wei et al (2013), *Walk on the Canal Line - A Study of the Historical Cities and Architectures along the Grand Canal*, Beijing.
- Feng D. (1839), *Illustrated Handbook of Huaiyang Water Conservancy Projects*.
- Fu C. (1985), *History of Canal Cities in China*, Sichuan People's Publishing House.
- Liu W. (2011), *Notes on Yangzhou Waterways*. Guangling publishing house.
- Wu L. (2001), *Introduction to Science of Human Settlements*, Beijing.
- Wu L. (2013), *History of Human Settlements in China*, Beijing.

ENGINEERING PHILOSOPHY IN THE GRAND CANAL

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Key words: engineering philosophy, Grand Canal of China

The Grand Canal of China, since the earliest of its many extensions and reconstructions linking five river systems over thousands of kilometers, has entered into its 25th century history with unshakeable vitality.

Yet, it is rather late when the Grand Canal has been recognized as cultural heritage. Only as recent as 2006 was the Jing-Hang (Beijing to Hangzhou) Grand Canal listed into the National Key Protected Units of Cultural Relics by the State Council. As comparison, the Great Wall was listed almost half a century ago in 1961.

The first obstacle for its recognition is the authenticity of the Grand Canal in its modern existence. The splendor in history is undisputable, proofed by countless archives as time-honored as the canal itself, and modern academic research home and abroad. However half of the Canal are buried and discarded, and half escalated into modern water transportation trunk lines, not different from any other natural rivers. Efforts have been made to tackle this problem, pioneered by field researches such as a project of multidisciplinary investigation on the Canal Heritage at Qingkou Complex in Huai'an, Jiangsu Province in 2008 (CACH 2012) and an academic archaeological excavation at Nanwang in Jining, Shandong Province in 2008 (SAI, CACH et al. 2011).

The second issue comes up when pieces of archeological sites and traces are presented in the least splendid forms - a piece of earth dyke here (Fig. 1), a fragmented stone gate there (Fig. 2), and a disconnected "natural river" in the countryside (Fig. 3). What are the Outstanding and Universal Values of the Grand Canal? Indeed, even from the perspectives of the history of science and technology, the Grand Canal, especially the Jing-Hang Canal developed during the Yuan, Ming and Qing dynasties (12-19th AD) does not seem to be very revolutionary. There was no seemingly scientific and holistic planning since it was developed on a trial and error process based on previous sections of artificial rivers. All the water engineering techniques for water diversion and supply, flood control and drainage were already used since very ancient times in China. The most advanced technology of compound gate developed in the Song Dynasty, the predecessor of the first modern ship lock in Milan,

Italy more than 4 centuries later (Kirby 1990), was then replaced by simpler and more labor-consuming weirs and boat trackers.



Fig. 1 A cross-section of the dyke at the west bank of the Inner Canal at Qingkou Complex, Huai'an, Jiangsu Province (Photo by the author 2008)



Fig. 2 Liujiabao Water Discharging Gate excavation site at the east bank of the Canal, Yangzhou, Jiangsu Province (Photo by the author 2011)



Fig. 3 A section of U-turn artificial river to adjust water difference at the intersection between the Canal and the Yellow River, now disconnected from the Canal due to modernization of curve cut-off, Qingkou Complex, Huai'an, Jiangsu Province (Photo by the author 2008)

Without a totally different perspective, we would have had the same exclamation made by a French missionary, Louis Lecomte, when he traveled along the Grand Canal in 17th century: "It was totally unbelievable for those who were little equipped with physics and level measurement theory could accomplished such a grand engineering endeavor so perfectly" (Lecomte 2004).

ENGINEERING PHILOSOPHY AND ANCIENT ENGINEERING HERITAGE

Engineering philosophy

The perspective of the philosophy of engineering is essential. Engineering is the profession engaged in modifying nature for social purposes through organized practical activities of design, construction and maintenance. While the nature of science is to understand nature, technology to invent reproducible processes and artifacts based on scientific theories, the nature of engineering is to change nature on a case-by-case basis through the management of not only customized science and technology application, but also trade-off of political, social and environmental goals. So the philosophy of engineering addresses such issues as the relationship of engineering with nature and society, and their interaction with social and cultural values.

Ancient engineering heritages

China has a very prolonged pre-industrial civilization which leaves rich ancient engineering heritages. These include land and water transportation, flood control,

irrigation and water diversion, water supply and discharge, land reclamation, salt and mineral production, military and defense, and urban infrastructure development. They differentiate both from ancient monuments such as palaces and temples, and from industrial heritage in the modern sense. They are massive in scale, ordinary in daily life, less ceremonial and aesthetic, and backward compared with modern S&T development, as in the eye of the French missionary. However these extensive ancient engineering was, and has been the fundamental driving engine for the development of Chinese Civilization, which deserves more attention, appreciation and conservation.

Characteristics of engineering values

Values are the core of heritage conservation. It is therefore very crucial to understand the special values of ancient engineering heritage from the perspective of engineering philosophy.

1. Function values. Engineering is a profession of practice. It is problem-oriented and user-oriented which see to get results. So the functionality is the most basic and valuable nature of engineering heritage, practicability and flexibility more important than advancement in technology or perfection in theory.
2. Synergy values. Engineering is a process and result of compromise and balance of man and nature, of multiple goals, multi-disciplines, multi-technologies and diversified interests. The combination and integration of heritage components are far more valuable than each and individual sites and elements. Engineering heritage need to be understood and preserved in its relationship, not only within individual composing sites as an organic system , but also with people, community, nature and ecology.
3. Development values. Engineering is centered on the management of change. To realize the functionality and to serve targeted goals, engineering has to be maintained and operated with changing natural and social environment. The fundamental contribution of engineering is sustainable development of human beings. So there is a very special requirement to evaluate the authenticity of engineering heritages to consider their dynamic changing characteristics.

THE GRAND CANAL IS A MASTER PIECE OF ANCIENT ENGINEERING HERITAGES

From the engineering philosophical perspective, all the fragmented traces are precious evidences for people to admire the Grand Canal of China, the most mega-sophisticated water transportation engineering during the pre-industrial

revolution period. Each of the three values in ancient engineering heritages – function, synergy and development – is best embodied in every aspect of the following four areas of politics, technology, society and landscape.

The components of the Grand Canal heritage are classified according to the four areas into three categories (Table 1): water facilities (technological measures to modify nature), auxiliary facilities (managerial/political institutions), and derivative sites (social and cultural impacts of the Canal).

Canal name	total canal length (km)	Water facilities included in the plan						subtotal
		Canal portion	Canals length (km)	Water supply sites	water control facilities	auxiliary facilities	derivative sites	
Tonghui River	29	3	5.5	4	8	2	4	21
North Canal	148	1	46		4	8	4	17
South Canal	458	1	210		13	2	8	24
Huitong River	450	3	244	5	41	3	11	63
Middle Canal	483	3	44		6	1	4	14
Huaiyang Canal	241	8	205	2	25	6	31	72
South Yangzsi Canal	479	14	333		36	11	22	83
East Zhe Canal	225	2	154	1	20	4	5	32
Wei (Yongji) River	462	3	123	1	4		5	13
Tongji (Bian) River	236	10	157		10	4	7	31
Total	3211	48	1521.5	13	167	41	101	370
World heritage sites		27	1011	2	34	9	12	85

Table 1 Components of the Grand Canal heritage sites in the Master Plan

A national endeavor with political goals

The political goal the Grand Canal served made it unique. There would not be such a pains-taking engineering endeavor without strong political and/or military motivations for a vast yet centralized nation of China. Under a special tax system of *Caoyun*, or transportation grain tribute, a bulk water route was necessary to link

political centers, first in Luoyang (during Sui, Tang and North Song period of 7th – 12th AD), and then in Beijing (during the Yuan, Ming and Qing period of 13th -19th AD), with key economic areas in the south. Annual grain transport volume would be as much as of up to 4 million piculs¹, together with all other special supplies from south and west China. As a trunk route of strategic importance, the Canal had been maintained and operated at national level, at costs sometimes as high as one-tenth of national fiscal revenue.

There are still administration facility sites that could be found along the Canal, and listed as World Heritage Sites, such as the *Caoyun* Governor's Mansion in Huai'an, a national tax offices in Linqing, and national granary sties – Hanjia Granary and Huiluo Granary in Luoyang, Liluo Granary in Xun County and Fuyi Granary in Hangzhou.

A wonder in the human history of construction

The Grand Canal is an engineering marvel, extending up to 1800km to 2400km at different times. Major rivers in China run from western mountainous regions to eastern coastlines. The Grand Canal made an artificial waterway from south to north, crossing and linking five major rivers with different geographic and hydrologic conditions (Fig. 4). In order to realized water transportation of a super-long distance, numerous facilities of dams, reservoirs, feeding tributaries and discharging spillways, weirs, locks, dykes, sluice gates had been devised to solve major problems of water supply and elevation difference. The mega system has been in operation as an inseparable system for centuries, and some of the sections has been in continuous operation for over 2500 years.

One of the most representative cases, included in the World Heritage sites, is at the summit of the whole route, the Nanwang Engineering Complex. At a time without any modern technology, the summit of 50 meters in elevation was successful surmounted in 15th century. The Daicun Dam was constructed on the Wen River to divert its water into the Canal. The incoming water was diverted the second time according to the terrain with three-tenth to the South and seven-tenth to the North to ensure navigation.

Another most sophisticated case is Qingkou Complex, the only site included in the World Heritage as a multi-type complex (Table 1). It was here that the Canal tangled with the Huai River and Yellow River from 12th to 19th century. Among the three rivers, the Yellow, with highly sandy water, was 3 meters above the Canal, and often overtook the other two with heavy silt. A powerful Huai flow from upstream would be very helpful to defend the Canal against the Yellow and wash out its silt but also dangerous to the embankment of the Canal. Yet too weak Huai flow could risk the

1 A picul, or dan, is a traditional Chinese unit of weight, normally defined as "shoulder-load" that a man can carry on a shoulder-pole. The weight of a picul differed in different dynasties. Generally a picul amount to about 50-60 kilograms.

Canal into water supply shortage. Thus, the Canal was totally dependent upon the sensitive balance the Yellow and Huai.

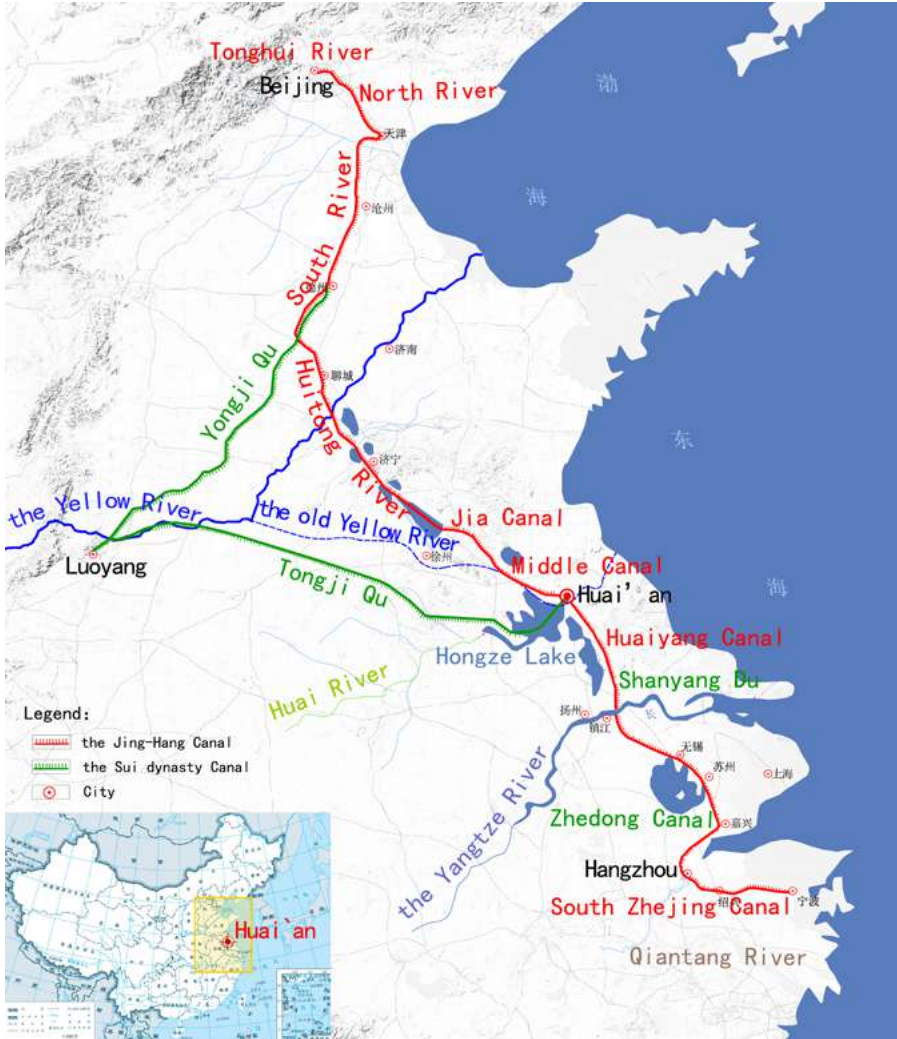


Fig.4 Scheme map of the Grand Canal

The Qingkou Complex had been in constant changes with different engineering strategies to tackle ever changing natural conditions. During the early Qing Dynasty, the Canal (the Inner Canal) curved further to the south of the Yellow, trying to take the momentum from the Huai through Hongze Lake, then turning back to the north

in a U pattern to cross the Yellow. On the U-turn, three pairs of sluice gates were set up together with a serial of contraction weirs to adjust and control the flow. To the north of the Yellow, a separate channel (the Middle Canal) was excavated so that the boats did not have to use the unstable course of 180 kilometers Yellow any more. As the situation worsen late in the Qing Dynasty, numerous temporary facilities were constructed to address the problem of shallow water due to heavy silt, until finally the Yellow itself changed its course back north in 1855.

Even today The Qingkou Complex has never lose its importance as a transportation hub on the Grand Canal. Today, vessels could go through a three-line sluice gate directly, avoiding the 14 kilometers U turn. The viability of the Qingkou Complex evolves into a modern hydraulic complex of 4 locks, 5 sluices and 1 hydraulic power plant where 9 waterways cross in an area of just about 2 square kilometers.

A social and cultural artery of water life

The time-honored political and fiscal system of *Caoyun* through the Grand Canal had brought prosperity, and decline for some in modern times, to numerous towns and cities along the transportation route. The planning and construction of Luoyang in the Sui and Tang dynasties, and Dadu (Beijing) in the Yuan Dynasty took advantage of its access to nation-wide resources through the Canal and developed into metropolises with population over a million. Special clusters of trades also developed along the regions such as salt trade, ship building and gangs of boatmen.

The Canal, like a vigorous artery, animated cultural and social exchanges between different regions and ethnic groups. Unique styles have been formed of mixed flavor foods, water-related worship ceremonies, and folk arts. It has shaped unique lifestyles of people living along its waterway (Fig. 5). Among the 101 derivative sites in the Master Plan, 20 of them are water communities (Table 1)



Fig. 5 A water town on the Grand Canal, Xixing in Hangzhou (Photo by the author 2016)

A combined landscape of man and nature

The landscape has been substantially altered in eastern regions of China. To ensure navigability against natural conditions for centuries at whatever costs, the Yellow River had finally become an high-above-ground suspended river that could no longer be controlled. Towards the late Qing Dynasty, the Yellow re-altered its course back to north. The Huai was forced to change its route into the Yangtze when its outlet to sea had been blocked. Its lower-reach tributaries of the Yi, Shu and Si rivers evolved into an independent system. The Hongze Lake Reservoir has been developed into the 4th largest lake in China with its ever higher dyke to defend against the Yellow. An artificial elevation of 10 meters is made between the two side of the 60 km long dyke, exposed the vast areas downstream to constant flood and water-log risks.

From the case of the Grand Canal we can understand how major engineering works could have far-reaching impacts on nature on both positive and negative terms. It provides us precious experiences and lessons to learn from for future engineering ecological consideration.

PRACTICALITY OF ENGINEERING PHILOSOPHY

If the first breakthrough for the Grand Canal heritage conservation is to verify its authenticity by concentrating on multidisciplinary research on different sites and traces, the introduction of engineering philosophy is the second breakthrough. With an engineering philosophical mindset, the engineering values could be comprehended for its sophisticated interaction with political, social and cultural settings in addition to science and technological achievements. It therefore has practical significance in an integrated approach for Canal heritage investigation, identification, conservation and management.

The Grand Canal, an unparalleled historic phenomenon in the world, is happened in a country heavily dependent on water, with special emotions towards water, and sophisticated capacities to deal with water since ancient times. The Grand Canal is one of the greatest contributions to mankind, its profound impact still lasting today. To understand it, preserve it, and enhance it, a philosophical stance should be taken and no effort should be spared from all walks of life.

BIBLIOGRAPHICAL REFERENCES

- China Academy of Cultural Heritage (2012), *Qingkou Complex on the Grand Canal – Comprehensive Research of its Engineering Heritage*, Beijing.

- Shandong Archaeological Institute, China Academy of Cultural Heritage, Jining Municipal Heritage Bureau, and Wanshang County Heritage Bureau (2011), *Nanwang Wenshang on the Jing-Hang Grand Canal – a Survey and Excavation Report of the Nanwang Water Diversion Pivotal Project and Dragon King Temple Complex*, Beijing.
- Kirby S. R. (1990), *Engineering in History*, New York.
- China Academy of Cultural Heritage, Southeast University, Hebei Historical Architecture Conservation Institute, Shaanxi Historic Monuments and Sites Conservation Technological Research Center, Tianjin University, China Urban Planning and Design Institute, China Water Conservancy and Hydraulic Research Institute, GIS supported by Tsinghua University (2011), *The Conservation and Management Master Plan of the Grand Canal*, internal report.
- State Administration of Cultural Heritage (2013), *the Grand Canal for World Heritage Nomination Dossier*, available at World Heritage Center website, <http://whc.unesco.org/en/list>
- Lecomte L. (1990), *Nouveaux mémoires sur l' état present de la China (1687-1692)*, Chinese translation 2004, Zhengzhou.
- Yu B. (2011), "A Preliminary Discussion on Engineering Heritage", in *Southeast Culture*, II/ 220, pp. 14-18.

THE MARITIME SILK ROAD AS SERIAL HERITAGE

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Keywords: Maritime, silk road, serial heritage, world heritage, trade, cultural exchange, type of heritage

INTRODUCTION

From 1988 to 1997, UNESCO carried out a 10-year project titled “Integral Study of the Silk Roads: Roads of Dialogue”. The project aimed to revisit five routes associated with the Silk Road. Since the expeditions, one of the five routes, the overland Silk Road has gained much attention both academically and practically. As a fruit, in June, 2014, the first serial property under the title of the Silk Road - “The Routes Network of Chang’an-Tianshan Corridor” was inscribed on World Heritage List.

However, compared to the overland Silk Road, the Maritime Silk Road receives much less attention, partly because it appears to be more challenging to define due to its cross-oceanic nature. According to the *Thematic Study of the Silk Road* conducted by Tim Williams (2014), an archaeologist from University College London, one distinctive feature of the overland Silk Road stems from its physical continuity, namely the corridors that reveal the coherent physicality of the routes. In contrast, there is no such a characteristic for the Maritime Silk Road. In this sense, how could we generalize or theorize the scattered marine heritage sites across oceans? How, in lights of World Heritage, should these heritage sites be identified, conserved and interpreted within the framework of the Maritime Silk Road?

As a serial property, the Maritime Silk Road’s nomination for World Heritage needs a number of works. The very first step is a thematic study on its definition, the identification of spatial scope, aspects of its essential values on global history, as well as types of the remains. In this study, we aim to provide a preliminary investigation of the abovementioned issues. And we hope that the analyses will be helpful for the next step of the identification of heritage sites and the strategy for the serial nomination.

DEFINITION

The Maritime Silk Road was the outgrowth of ancient people benefiting from monsoons and ocean currents as well as using traditional sailing techniques that opened up East-West transportation through maritime passages. It was also a way for different civilizations to communicate in the field of science and technology, economy and culture.

"Maritime Silk Road" is a combined term of "Silk Road" and "maritime." Ferdinand von Richthofen, a German geographer, first created the term Silk Road to refer to the ancient Eurasian trade network (von Richthofen 1877). French scholar Emmanuel-Edouard Chavannes expanded the concept, pointing out that the Silk Road system should also include the maritime routes of Indian ports (Chavannes 1903). In addition to "silk," there are many other names given for the ancient maritime network, such as ceramics road, tea road, spice route, monsoon route, road of Buddhism, etc., which either referred to the entire network or part of it. It should be noted that these terms are neither mutually exclusive nor in conflict with each other. They all reveal certain features of the ancient marine network. The Maritime Silk Road is used here because of its broadest acceptance and its closest relation to the widely acknowledged Silk Road.

Roughly speaking, the Maritime Silk Road was formed around the 2nd century before Common Era (BCE), and it lasted until the late 19th century. Before its formative period, there had been certain maritime contacts between neighboring areas. However, it was not until the 1st century BCE that all regional marine networks became inter-connected. *Periplus of the Erythrean Sea* recorded the trade networks stretching from India to east African coast. In addition, Pliny the Elder recorded a visitor from today's Sri Lanka to Rome who introduced his country's connection to China. These both proved that, by that time, in addition to the existing Silk Road through the deserts, people had discovered another way of connection across oceans.

After the late 19th century, steam ships, replacing sailing vessels, became the main means of transport for maritime trade. Some European countries established a wide range of colonial domination in most areas along the maritime trade routes. Traditional maritime trade routes had given way to modern ones.

SPATIAL CHARACTERISTICS

As a comprehensive traffic system, the Maritime Silk Road stretches from Japan in East Asia to the west bank of the Mediterranean. It can be categorized into six zones: East Asia, Southeast Asia, South Asia, West Asia, East Africa and the Mediterranean. It is manifested as a specific form of maritime network based on important ports (e.g. Alexandria, Beirut and Istanbul in the Mediterranean Zone, Mogadishu, Mombasa

and Kilwa in East Africa Zone, Hormoz and Aden in West Asia Zone, Calicut, Cochin, Thanjavur and Galle in South Asia Zone, Malacca and Palembang in Southeast Asia Zone, as well as Guangzhou and Quanzhou in East Asia Zone), with a series of intertwined maritime routes that connect the ports.

The formation and development of these ports was influenced by geographical settings and political, economic and cultural factors. After emergence, they would temporally reveal a nature of long-term continuity and spatially yield strong effect of absorption over surrounding areas. The areas then became the centers of cargo distribution and cultural exchanges in a large-scale area, during a particular period or throughout the whole history of the Maritime Silk Road. The whole vast area centered by the ports were the most important nodes, which constituted the overall pattern of the Maritime Silk Road. The nodes comprise important navigation infrastructures, production sites of maritime trade goods and related outcome of trade and cultural exchange activities.

In the whole communication network of the Maritime Silk Road, some nodes provide essential support and guarantee to the cross-oceanic navigation because of favorable material supplies, technological advancement, population density and trade capacity. These nodes are geographically adjacent with each other, thereby composing a sphere that served as a strategic core region for trade, culture and technical communication along the Maritime Silk Road. Meanwhile, they are the places densely composed of numerous sites as testimony to the communication. Under the frame of cultural heritage, these “spheres of active interaction” can be deemed as the most important and typical carriers for the unique values of the Maritime Silk Road (Fig. 1).



Fig. 1 Zones and Spheres of Active Interaction of the Maritime Silk Road

TRADE AND CULTURAL EXCHANGE

Trade

The fundamental force for the formation and development of the Maritime Silk Road was the exchange of goods between different zones. The goods transported were greatly different from those on the overland Silk Road. The cargos on the overland Silk Road were mainly high-value and light-weight goods, such as silk, rheum officinale, spice, musk and tea. The goods on the Maritime Silk Road, breaking through the limitation of weight, could be heavy-weight, such as metal wares, ivory and porcelains.

The formation of trade network was primarily realized by specific characteristics of goods and roles of each zone, which had special goods that were of interest to peoples in other zones. Overall, there were three types of goods: precious metals such as gold and silver, raw materials for daily life such as pepper, frankincense, and timber, and handicrafts such as brocades, silk, and ceramics. Fundamentally, the importance and role of each zone was determined by its goods. Every zone was needed by each other.

For example, gold in Southeast Asia and East Africa ensured their strategic role in the trade system. After the Mediterranean's supply of gold declined because of the collapse of the Roman Empire, Southeast Asia with abundant gold resource became more attractive to Persian and Indian merchants. Likewise, East Africa was brought into the trade system partially for its gold resource. Since the 12th century, the rulers of the inland nomadic and agricultural states of Africa had used gold to trade with coastal cities (McPherson 1994: 105-6). When Portuguese arrived in East Africa, gold was perhaps the most tempting resources for the new coming colonists.

There were many types of ceramics along the Maritime Silk Road, among which Chinese porcelains was an exemplar. The coastal areas of Zhejiang and Fujian were gifted for making high-quality porcelains because of unique natural kaolin. There are still a lot of kiln sites surviving until today. After the 12th century, because of the increase in demand for imports, especially silver, the production and export of porcelains from China increased rapidly, and had a vase influence on the West.

There were many other goods of equal importance, such as frankincense in West Asia and East Africa, brocades in Persia, gold and silver wares of the Mediterranean, cotton textiles in India, incenses in Southeast Asia, etc.

Culture

Movements of traders resulted in exchanges of cultures, especially in forms of religion. From the 7th century to the Age of Discovery, one of the most integral parts of the Maritime Silk Road was the spread of Islamic religion and culture, which today are embodied in various heritage sites. Outside the Arabian region, the

earliest Mosque might be Cheraman Juma Masjid in Thalanagara, Malabar Coast, India, which was established in 629. Moreover, Masjid al-Qiblatayn in Zeila, coast of Somalia, was established in the 7th century; Jamia Masjid Banbhore in Sindh Coast, Pakistan, was established in 727; Huaisheng Mosque in Guangzhou was established in the 7th century. In the 15th century, the ruler of the first Islamic regime in Southeast Asia, Demak Sultanate, established Masjid Agung Demak in Java.

Hinduism and Buddhism originated in South Asia, and mainly spread eastwards. In early Common Era, Hindu monks and priests, Buddhist monks and priests, architects and craftsmen prevailed in Southeast Asia, where architectural art was strongly shaped by South Asian styles. Furthermore, temples became an important institution not only for religious function, but they served as an agency for social and political integration (Ray 2015: 178). Both Buddhism and Hinduism left a lot of cultural heritage sites. The earliest witness to Buddhism in Southeast Asia was Bujang Valley Archaeological Site in Malaysia, where the temple was believed to be built 2000 years ago. Stone inscriptions and figures of Buddha have been excavated there. Also, Muara Jambi Pagoda Area in Indonesia was another evidence of the spread of Buddhism in Southeast Asia. In China, Buddhism appeared around the 4th century, after which it has been extensively incorporated into the Chinese culture, and had a far-reaching influence on Japan and Korea. Temples in nodes of the Chinese coast, such as Kaiyuan Temple in Quanzhou and Guangxiao Temple in Guangzhou, bore witnesses to this history.

Confucianism, originated in China, was widespread in Japan and Korea. In the Ming and Qing dynasties, the main agents of Sino-Japanese cultural exchange were Chinese scholars. Zhu Shunshui and Chen Yuanyun were among the most influential ones. In 1619, Chen Yuanyun settled in Japan, and dedicatedly introduced Chinese literature, martial arts and created Judo. Zhu arrived at Nagasaki and settled down in 1659. He lived in Japan for over 20 years, actively introducing Chinese culture, namely Confucianism. He was honored by Japanese scholars as "sage of culture" (Fig. 2).

Cultural diversity and fusion is characteristic in the history of the Maritime Silk Road. This is remarkably evident in crucial spheres of interaction. For example, in historic town of Malacca, Malaysia, a street is composed of three religious sites of Hinduism, Islam and Chinese Buddhism. Because of the harmonious coexistence of the three religions, the street is commonly called the "Street of Harmony." This kind of harmony is more evident in China's southeast coastal areas. Almost all religious cultures ever existing in history along the Maritime Silk Road have had their remains in this region.

Regarding the nomination strategy, we suggest that each nominated property should include all three categories of heritage, most of which would be located in the spheres of active interaction. However, it is unnecessary to include all the listed components within each category. Rather, it is suggested to allow each nomination enough flexibility to justify the characteristics of the property based on peculiar local contexts. For example, a production site could be a porcelain kiln in East Asian countries, while in India it could be a cotton textile workshop or a pepper trade market.

CONCLUSION

In this article, we have reviewed the main issues of the Maritime Silk Road for a holistic strategy for its World Heritage nomination. We suggest that a thematic study should be conducted, in order to explore the rationale of site selection. The present study provides some points about the understanding of the history and heritage of the Maritime Silk Road. Furthermore, more work has to be done to expand this preliminary analysis. And the final nomination and inscription of World Heritage may take longer time than expected.

BIBLIOGRAPHICAL REFERENCES

- Chavannes E. (1903), *Documents Sur les Tou-kiue Occidentaux*, Whitefish.
- McPherson K. (1994), *History of the Indian Ocean*, Oxford.
- Ray H.P. (2015), *Beyond Trade: Cultural Roots of India's Ocean*, New Delhi.
- von Richthofen F. F. (1877), *China: Ergebnisseeigner Reisen und daraufgegründeter Studien*, Berlin.
- Williams T. (2014), *The Silk Roads: an ICOMOS Thematic Study*, Paris.

PART 5

**HERITAGE CONSERVATION
AND MANAGEMENT
OF CULTURAL ROUTES
IN CHINA**

OPPORTUNITIES AND CHALLENGES FOR THE CONSERVATION OF THE GRAND CANAL IN THE NEW ERA

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Keywords: Grand Canal, large-scale linear cultural heritage, heritage conservation

OVERVIEW

The Grand Canal was successfully inscribed on the World Heritage List in 2014. As one important large-scale linear cultural heritage of China, the Grand Canal faces enormous difficulties in the conservation and management due to the huge size, complicated composition and active state in use. With many years of continuous input and conservation efforts, the overall condition of the Grand Canal has been significantly improved, but many problems remain to be addressed.

President Xi Jinping emphasized when inspecting the Grand Canal in February 2017 that it is the common responsibility of all provinces and cities along the canal to conserve and protect the property. In June of the same year, Xi made the important instruction that “the Grand Canal is a valuable legacy left by our ancestors and a flowing culture and should be properly conserved and protected, passed on and utilized”. On October 18, 2017, the 19th National Congress of the CPC was convened in Beijing. The reports at the 19th National Congress of the CPC set forth that “as socialism with Chinese characteristics has entered a new era, the principal contradiction facing Chinese society has evolved. What we now face is the contradiction between unbalanced and inadequate development and the people’s ever-growing needs for a better life.” (Xi 2017). The Grand Canal Cultural Belt is an important concept put forward in this context, and an important decision of China in its initiative to adapt to the changes of the principal contradiction and to realize the Chinese dream of great rejuvenation of the Chinese nation. It has become an important epochal topic to deeply mine the resources of the canal, properly protect and conserve, pass on and make good use of the cultural heritage. The Grand Canal Cultural Belt initiative offers new opportunities for solving many problems in the conservation and

management of the Grand Canal, but there are some challenges in the construction of the belt.

GRAND CANAL CULTURAL BELT CONSTRUCTION AGAINST THE NEW HISTORICAL BACKGROUND

The Grand Canal Cultural Belt construction is to, centering on the property, comprehensively integrate, conserve and make good use of resources along the canal. It is a national strategy in the new era. This project is led by the National Development and Reform Commission and jointly implemented by related ministries and commissions of the State Council and provinces (cities) along the canal. Entrusted by the State Administration of Cultural Heritage (SACH), the Chinese Academy of Cultural Heritage (CACH) is responsible for research and investigation of the conservation state of the Grand Canal and compiling the Report on the Thematic Studies of the Cultural Heritage Conservation and Valorization of the Grand Canal Cultural Belt. According to the information analysis and field investigation, the paper makes preliminary analysis of the spatial scope and time range, composition of the resources, conservation and valorization of the property, and implementation of the construction of the Grand Canal Cultural Belt initiative.

In terms of geographic distribution, the Grand Canal Cultural Belt spans over six provinces and two municipalities in China's central and eastern regions, namely Beijing, Tianjin, Hebei, Shandong, Jiangsu, Zhejiang, Henan and Anhui, involves 34 cities, connects five rivers¹, and runs through more than 10 latitude degrees and several climatic zones, structuring a belt-like zone with massive spatial volume and significant natural and cultural diversity. Historically and culturally, the Grand Canal Cultural Belt is located in the core area of agricultural civilization in ancient China, connects six of the eight ancient capital cities² of China, boasts profound historical and cultural resources and is the crystallization of the 5000-year civilization of China.

In terms of the composition of resources, it can be divided into two categories according to their relation with the Grand Canal, namely the Grand Canal heritage and associative resources³, totaling about 5,000 sites. The Grand Canal heritage is determined based on elements identified in the administrative planning of various levels and the nomination document and by referring to the late phase studies,

1 The five rivers, namely Haihe River, the Yellow River, Huaihe River, the Yangtze River and Qiantang River.

2 Beijing, Hangzhou, Luoyang, Zhengzhou, Kaifeng and Anyang.

3 The Grand Canal Cultural Belt heritage resources herein refer to only the immovable cultural relics and other material relics, excluding intangible heritage resources.

archaeological research and excavation. The heritage includes remains of water conservancy projects, remains of auxiliaries and canal related heritage, totaling more than 1,000 sites which are directly related to the overall values of the Grand Canal and contribute to deepening value connotation of the heritage. The canal's associative resources are cultural heritage resources in the provinces (municipalities) along the canal except for the physical fabric of the Grand Canal, which belong to the same geographic and cultural zone with the Grand Canal heritage. The associative resources total more than 3,000 sites, and can be classified as the state priority protected sites, world cultural heritage and resources on the tentative list, museums, historical and cultural cities, towns and villages, state-level tourist attractions, state-level natural reserves and so on.

As for protection and valorization of the property, sections with high cultural values, concentrated cultural resources, high presentation and valorization potential or important strategic location will be chosen to drive regional development. The tasks to be implemented include: conservation of the physical fabric, construction of museums, valorization and revitalization of industrial heritage and presentation of canal culture.

In terms of organization and implementation, the Grand Canal Cultural Belt construction is led by the ministries and commissions of the State Council in line with general planning of the central government, active coordination of local governments, and special planning and implementation plans. Moreover, comprehensive guarantee and support will be provided by the central government and local governments from perspectives of institution, personnel, funding, legal construction and policies.

In conclusion, the Grand Canal Cultural Belt is crystallization of the rich historical and cultural resources, "a symbol of the Chinese spirit and icon of the Chinese culture" (Dong 2017), and a beautiful name card for the world to have a better understanding of China. It is of profound significance for the identification of the national cultural identity and enhancing the cultural self-confidence and provides favorable conditions for development of tourism, leisure and other industries. It connects several urban agglomerations along the river, enhances multi-dimensional communications of the areas along the property, and plays an active role in coordinated development of different areas. It is a long ecological corridor consisting of historical waterways and riverside landscape, a landscape scroll combining complicated historical sites and environmental features, boasting great landscape ecological significance.

CURRENT SITUATION AND PROBLEMS IN CONSERVATION OF THE GRAND CANAL

After being successfully inscribed on the World Heritage List, the overall state of the Grand Canal has been significantly improved with continuous input of resources

and implementation of conservation efforts. However, there are still many problems given the difficulties in conservation management and other factors.

In terms of the management system construction, Zhejiang, Shandong, Hebei and Tianjin and other provinces and municipalities have recently included the cultural heritage conservation tasks into the management of “River Director System” under which the leaders of the Party committees and the local governments at all levels are in charge of the control and management of rivers within their respective administration. This system strengthens the accountability system and improves efficiency in protection of the biological environment and control of construction projects around the Grand Canal. However, most cities along the canal have not established any dedicated property protection administration institution, leaving relative low protection management level. The absence of administration and incomplete communication and coordination mechanism make the property hard to get proper maintenance and conservation.

As for the legal construction and control, the state-level *Management Measures for the Protection of the Grand Canal*⁴ is low in its level and the local protection management legal system is incomplete, resulting in insufficient and weak negotiation of the existing laws and regulations over the development and construction projects along the canal, and relative inadequate law enforcement of related administrations.

As for the protection resource input, a series of measures on protection of the physical fabric, environmental remediation and ecological environment improvement have been implemented successively along the canal, creating positive social benefits. However, there is still a large gap between input and total resources of the Grand Canal, resulting in shortage of daily maintenance funds, low level of expertise and management capability of staff members, low grade of protection of some sections and slow implementation of protection measures and monitoring and early warning programs.

In terms of the presentation and valorization research, the regions along the canal have made preliminary efforts in presentation and valorization through a variety of means such as canal museum, heritage park, canal heritage path, identification interpretation and multi-media and further improved the ecological landscape and environment of the Grand Canal and its neighborhood. However, the presentation system with the Grand Canal as core has not been established yet. The local presentation and publicity measures are simplex, featuring backward channels, poor accuracy, completeness and readability of the publicity information and weak research, incapable of guiding the protection and management in practice. Some properties in the wild feature low valorization, bad accessibility, deficient presentation and interpretation facilities, poor overall display of the property values.

4 This Measure consists of 15 articles, released by the Ministry of Culture on August 14, 2002, implemented as of October 1, 2012.

OPPORTUNITIES AND CHALLENGES IN THE GRAND CANAL PROTECTION

Opportunities

Against the new historical background of promoting the Grand Canal Cultural Belt initiative, opportunities of the Grand Canal protection lie in promoting the property management system construction, improving the legal system of the property protection and valorization, increasing input of the protection resources, and enhancing the basic research and presentation and valorization of the heritage resources.

As for property management, the Grand Canal Cultural Belt initiative will be conducive to improving heritage protection and management system, clearly defining responsibilities of the non-cultural heritage protection departments, improving the inter-departmental and cross-regional coordination system, enhancing the coordination capability of the city alliance and office for protection of the Grand Canal and other property management coordination institutions and facilitating long-term implementation of the coordination mechanism.

As for the law-based protection and planning system construction, the Grand Canal Cultural Belt initiative will help promote protection regulation upgrading on the whole and complement local protection regulation, gradually establish a multi-level Grand Canal protection management legal system with the *Law of the People's Republic of China on the Protection of Cultural Relics and Regulations for the Protection of the Grand Canal* as the higher-level laws, and the provincial and municipal regulations, provisions and departmental rules as the specific implementation basis. Such efforts are to enhance the legal effect of the Grand Canal heritage protection and management, improve control and management of the development and construction projects along the river, and create favorable conditions for the Grand Canal protection with "laws in place and strict law enforcement". They help formulate and improve the canal protection regulations and planning so as to provide comprehensive guidance with key points highlighted for the property protection management.

In terms of the input of protection resources, the Grand Canal Cultural Belt initiative is conducive to increasing support to the heritage protection and valorization, enlarging input of various protection and management resources, expanding channels of the protection and valorization funding so as to make up the gap of daily maintenance funding and shortage of professional management personnel, improve the management team capability building, upgrade the property protection of different sections, facilitate all-round implementation of routine inspection system and long-term implementation of protection measures and orderly roll out monitoring and early warning.

As for basic research, the Grand Canal Cultural Belt initiative will help enhance the overall research of the property, promote studies on the interconnectivity among

different sites and sections, and facilitate studies related to value discovery, living valorization and technical standards so as to systematically enrich basic research results and enhance the scientific and normative nature of the heritage conservation and valorization of the Grand Canal Cultural Belt.

As for presentation and valorization, the Grand Canal Cultural Belt initiative will help coordination of the presentation and valorization efforts of the property along the canal, promote establishment of the value-themed presentation and valorization system, and facilitate publicity of the overall protection and valorization concepts, innovate in the publicity and presentation means and modes, expand the presentation and interpretation channels, and enhance accurate communication, comprehensive communication and effective communication of the historical and cultural connotation of the property to improve information readability.

Challenges

It is an important goal of the Grand Canal Cultural Belt to drive the regional economic and social development with cultural development. Therefore, against the new historical background, the development and construction needs in the cultural belt will be significantly freed. Meanwhile, excessive development and valorization will undermine the overall protection of the Grand Canal heritage resources.

Following rapid urbanization and agglomeration of the cities in the cultural belt, and rolling out of the beautiful countryside construction program in villages along the canal, the large-scale upgrade and improvement of infrastructure and supporting facilities in urban and rural area along the canal bring challenges to the protection of the physical fabric of the property and pose risks of maintaining the landscape integrity of the neighborhood of the property.

With the rapid economic and social development of the cultural belt, the waterway in use today probably will be unable to meet the growing demand for material distribution, thus freeing strong demand on upgrading water conservation facilities and promoting waterway renovation, thus posing a serious challenge to the protection of the water conservancy heritage.

The presentation and wide spread of heritage resources within the cultural belt will facilitate rapid development of the tourism industry, resulting in sharp increase of tourists and large-scale construction of the tourist service facilities. The excessive tourism development and footfalls will generate potential threats to the overall protection and sustainable valorization of the property. However, local government management and control system is not well established and the available binding force is insufficient, the law enforcement is inadequate, thereby increasing the threats of excessive development and valorization to the protection of the property.

CONCLUSION

The Grand Canal is an enormous linear cultural heritage with a vast time and spatial span, heavy historical accumulation and excellent functional continuity. The outstanding universal values contained in the property are common spiritual wealth of the humankind. Properly protecting and utilizing the Grand Canal is of profound significance for enhancing recognition of national cultural identity and national cultural self-confidence and promoting international spread of the outstanding Chinese culture. The Grand Canal Cultural Belt initiative is an important national strategy set forth in the new historical background. It integrates the heritage resource protection and valorization, ecological environment improvement and stakeholder protection and management. It is conducive to harmonizing the relationship between heritage protection and economic development and facilitating integration of regional heritage resources. While the areas along the Grand Canal experience rapid economic and social development, the contradiction between development and protection becomes increasingly prominent. The Grand Canal Cultural Belt initiative, which aims at heritage resource integration, protection and valorization with the Grand Canal as core, will offer useful reference for solving the existing problems in the Grand Canal heritage protection and management. Therefore, the related departments should take comprehensive measures to actively prevent potential risks in the construction of the Grand Canal Cultural Belt.

BIBLIOGRAPHICAL REFERENCES

- Dong H. (2017), “Innovation in Protection of World Heritage in the Grand Canal of China from the Perspective of Cultural Confidence” in *Journal of Jiangnan University* (Humanities & Social Sciences), 16/5, pp.92-96.
- Xi J. (2017), *Xi Jinping speech: Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era*, delivered at the 19th National Congress of the Communist Party of China. Xinhuanet.com, 18 October.

THE GRAND CANAL CONSERVATION IN HUI'AN: FROM PLANS TO ACTIONS

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Keywords: Grand Canal conservation, Huai'an

INTRODUCTION

Huai'an is an important city in north Jiangsu Province, located in the intersection of Huai River and the Grand Canal (Fig. 1). No other city has such a long history closely connected with the canal: it has the earliest section of the Grand Canal (Hangou, 5th century B.C), since then, the Grand Canal never left Huai'an; the most complicated and important water engineering project of the canal- the Qingkou Complex (Fig. 2, Yu 2012) is also in Huai'an. In the Ming (1368-1644) and Qing (1644-1911) Dynasties, Huai'an was not only the national water transport management center, but also the Yellow River, Huai River and the Grand Canal flood control governance center, grain transport center, ship manufacturing center and Huaibei regional salt collecting and distributing center. So Huai'an has rich canal heritages, including 63 kilometers long canal section, 35 water conservancy projects and related cultural heritages, 8 settlement heritages, 21 other canal cultural heritages, 27 intangible cultural heritages and 2 ecological and landscape conservation areas(-Southeast University, CACH 2009); 5 heritage sites were listed in UNESCO World Heritage site (2014), with 3,979 hectares protected zone and 6,289 hectares buffer zone, almost 14% of the total area of nominated property area and buffer zone (73,566 hectares).

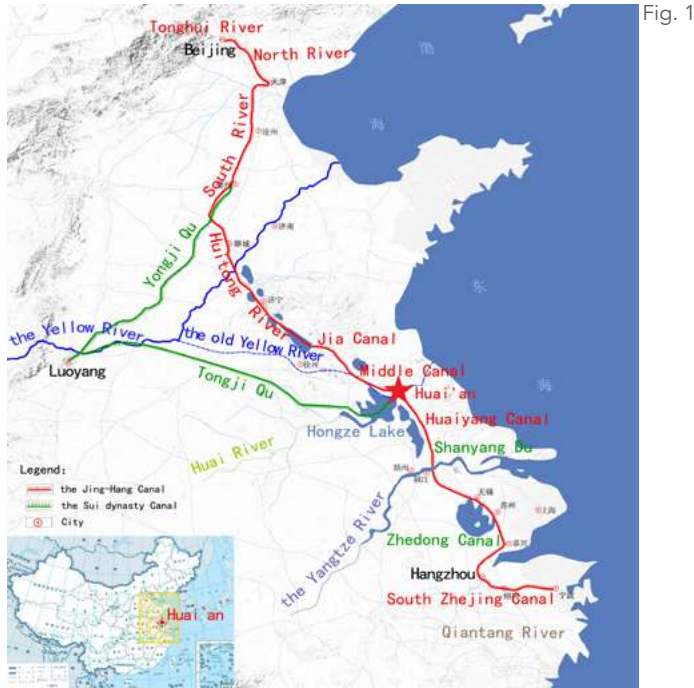


Fig. 1

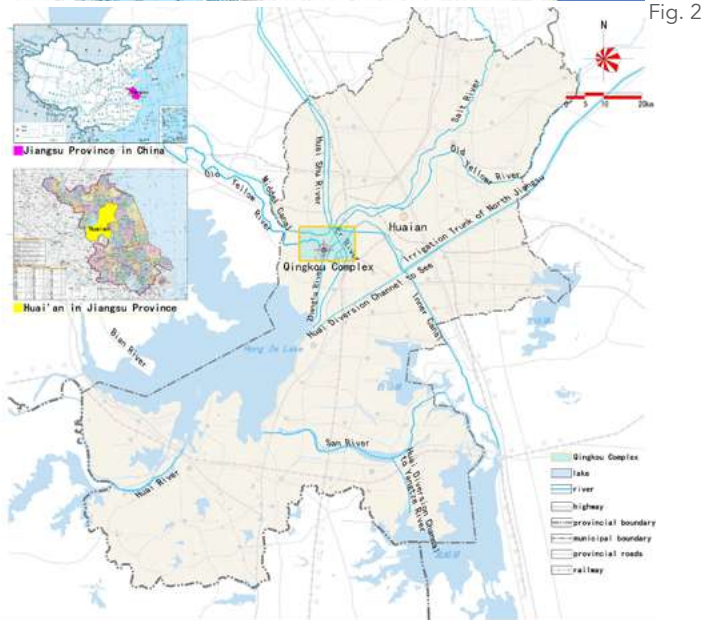


Fig. 2

Fig. 1 Location of Huai'an in the Grand Canal; Fig. 2 The Qingkou Complex

So when we talk about the Grand Canal heritage conservation, we cannot keep from talking about Huai'an. In this case study, we will review the management, conservation, interpretation, monitoring, research and other works before, during and also after its nomination for World Cultural Heritage, observe the implementation of conservation plan and analyze the main problems of the conservation, management and utilization of the canal heritage resources in Huai'an.

BEFORE NOMINATION: LITTLE WORK HAS BEEN DONE

Before 1980s, people in china had a very inadequate understanding of the heritage value of the Grand Canal and lack of studies and researches, probably because it is still in use and archaeologists are always more interested in earlier sites before Ming Dynasty.

Later, the main investigations were carried out for compilation of two books: one was in 1989, in accordance with the compilation of the Chinese Atlas of Cultural Heritages in Jiangsu Province, Huai'an has carried out a special survey along the canal, included 49 heritage sites in the book—including stone inscriptions, water lock sites, temples, ancient settlement sites, etc., most of them were above the ground and already cultural relic protection units at different levels; another was from 1995 to 1996, with the aim of writing a book about the stone inscriptions in Huai'an, totally 90 stone inscriptions was discovered along the canal during the survey.

Excavations took place in some construction projects to rescue the underground cultural heritages of the canal, such as the South-to-North Water Diversion project (part route of the Canal is used), the Huaiyin transportation lock upgrading project. Three sunken ships and other remains were excavated.

The most important discovery in this period was in 2002, the site of Caoyun (grain transport) Governor's Mansion was found and excavated during the urban regeneration in Chuzhou District (now is Huai'an District). A 6,300 square meters site museum was constructed and opened soon, with the name of China Water Transport Museum (Fig. 3).



Fig. 3 Site of Caoyun Governor's Mansion and China Water Transport Museum

DURING THE NOMINATION: SYSTEMATIC WORKS WAS CARRIED OUT

In May, 2006, the Grand Canal was announced as an unified site as the National Protected Units of Cultural Relics, and in December, the Grand Canal was listed in China's tentative list of World Cultural Heritages, began its 8 years nomination progress.

As one of the most important cities along the Grand Canal, Huai'an carried out systematic works during the nomination. Chinese Academy of Cultural Heritage in cooperation with Huai'an Museum, engaged in most of the works in this period.

Identification of the heritage property

As we mentioned before, because lack of studies and researches, people knew little about heritage elements and values of the Canal, so the first thing for the nomination was to identify the component sites of the canal.

From 2006-2013, large scale systematic investigations and excavations were carried out for a better understanding about the canal:

- during the third national cultural relic's survey (2007-2008), over 270 heritage sites along the canal was identified and registered in Huai'an (HMCRBFT 2012);
- from 2008 to 2009, CACH supported and financed a project "Research on the heritage survey method of the Grand Canal in Huai'an", within the area of Qingkou complex, 97 heritage sites was identified and registered, the research results was published in 2012 (CACH 2012);
- from 2008 to 2013, a joint archaeological work team from Huai'an Museum and CACH, excavated 24 archaeological sites, with total excavation area about 4,565 square meters, lots of locks, dikes, levees, wharfs and related temples in different historical period were discovered and excavated (CACH, Huai'an Museum 2016);

These large number of investigations and excavations had greatly deepened the understanding of the composition of the canal heritage, not only gave evidences for the study of the historical development progress and construction technology of the canal, but also provided basic documents for preparing conservation and management plans.

Finally, the Huai'an Section of Huaiyang Canal (water way), the Qingkou Complex (complex remains), Site of Caoyun Governor's Mansion (and associated remains of the Canal), Shuangjin Lock (water facility), Qingjiang Lock (water facility), Hongze Lake Levee (water facility) were selected and listed in the nominated heritage properties, followed the nomination strategy of "Sectional World Heritage Nomination and Overall Protection".

Conservation and management plans preparation

During the nomination, three-level Conservation and Management plans have been promulgated, and are being implemented, for the whole Canal heritage for a period up to 2030, including 2 plans in the state level (“Mast plan for heritage conservation and management of the Grand Canal” and “Heritage management plan of the Grand Canal, China”), 8 conservation Plans in provincial level and 35 plans in city level. Conservation plans for some important sites have been also prepared and being implemented in progress. In these conservation and management plans, 2 plans are most relevant for Huai’an: “Heritage conservation plan for the Grand Canal (Huai’an section)” and “Overall conservation plan for the Qingkou complex (2012-2030)”.

The “Heritage conservation plan for the Grand Canal (Huaian section)” was prepared by Southeast University and CACH, finished in 2009. The plan is divided into nine chapters, including general principles, heritage composition and evaluation, heritage conservation zoning and protection measures, exhibition planning, management requirements, archaeological work plan and requirements, implementation stage and related proposals.

The “overall conservation plan for the Qingkou complex (2012-2030)” was prepared by CACH and finished in 2012. This plan is a special plan for the nominated canal heritage, including details about the heritage conservation, management, presentation and interpretation work, also the archaeological work and time table.

IMPLEMENTATION OF THE PLANS

In this section, we will focus on the implementation of two plans, which has been promulgated, and are being implemented: “Heritage conservation plan of the Grand Canal (Huai’an section)” and “Overall conservation plan for the Qingkou complex (2012-2030)”, especially the completion of main projects or tasks in short- and medium-term plan. In order to facilitate the writing, we named the former Plan A and the latter Plan B (Tables 1-4).

Table 1 Archaeological works in Plan A

Stage	Plan	Implementation
Priority period of action (2010-2011)	Systematical archaeological work in Qingkou Complex	Excavated more than 10 sites from 2009 to 2011
	Gao Jiayan site excavation	Excavated in 2011
	Ancient Sizhou city site excavation	Excavation began in 2010
Short-term (2012-2014)	Qingkou site excavation	5 excavations
	Yanzhuang Palace. Wangying site excavation	Not excavated
	Qingjiang shipyard site excavation	Not excavated
medi-um-term(2015-2020)	Nanhuang damm, Dakouzi site, Shuidu site, Yandun site, Taozhuang Lock, Mulong site... excavation	Not excavated to date

Table 2 Conservation and management works in Plan A

Plan	Implementation
Priority period of action (2010-2011)	
Establish the Grand Canal conservation and nomination leadership office	Established the Grand Canal conservation and nomination leadship team, and the Grand Canal conservation and regulation project leadership office
renovation of buildings and facilities along the canal and environmental improvement	Dredging the canal, renovated or rebuilt the bridges
Finish the archaeological work in Qingkou Complex	Preliminarily finished
heritage site registration and rescue protection projects	Collected GPS data for each heritage site, and made documents for each site, implemented more than 6 conservation projects and more than 10 restoration projects

Revision of related historical city, town and village conservation plan	The new Huaian historic and cultural city conservation plan has been approved in 2012. The Matou historic and cultural Town conservation plan is waiting for approval
Research and select heritage sites for nomination and take measures to prevent from being damaged	Finished
Short-term (2012-2014)	
Make regulation for the Grand Canal conservation and management	Not yet
Make conservation and presentation plan for the Qingkou Complex	Overall conservation plan for the Qingkou complex (2012-2030) and Presentation plan for Qingkou Complex have been promulgated (2012)
Establish a public participation system to enhance the awareness of the heritage protection of the Grand Canal	Organized a series of activities to tell the knowledge of the canal to the public, such as exhibitions and lectures
preparatory work for the nomination	Finished
medium-term (2015-2020)	
Gradually relocate the occupying units along the canal, further improve the water quality and landscape along the canal.	In progress
make the tourism plan of the canal and carry out various forms of canal tourism	Overall plan of tourism development in Huai'an has been finished. The Grand Canal water transport theme park and Huaian world canal cultural and tourist area are being built.

Table 3 Archaeological works in Plan B

Stage	Plan	Implementation
Short-term (2012-2013)	3,000 square meters excavation in 4 sites within one year	Finished in august, 2013
medium-term (2014-2020)	Continue carrying out planned excavations	No more new excavations

Table 4 Conservation and management works in Plan B

Plan	Implementation
Short-term(2012-2013)	
Finish 9 protection projects, including 4 dams,4 locks and 1 temple	Finished in 2014
Design and construction of canal water conservancy and shipping system exhibition area, finish construction the Huiji temple and Shunhuangba archaeological exhibition area, establish 53 heritage sites identification and description system	Constructed Huiji temple and Shunhuangba archaeological exhibition area and set up introduction tablets in main heritage sites
Promulgate the conservation plan; finish “four have” works: set up boundary markers and protection mark monument, make conservation and management regulation, establish conservation institute and finish documentation work.	Except the conservation and management regulation, other works has been done
Comprehensive and in-depth value evaluation and research on the Qingkou Complex from technology, economy, society, landscape and other aspects; identify the boundaries of 53 heritage sites in the conservation plan. Carry out the protection technology research within the scope of masonry embankment, earth dam remains, inscriptions and other cultural relics	Value evaluation, boundary identifications have been done in the conservation plan, other works were not begin
medium-term(2014-2020)	
monitoring system construction	Qingkou Complex has been already included the world cultural heritage monitoring and early warning platform of the Grand Canal (2013)
construction pastoral scenery belt along the modern canal and the Yellow River	Not finished
Qingkou Complex museum construction	Not yet

Results and effects of plan implementation

Through the implementation of the plans a lot of achievements have been achieved.



Fig. 4 Different forms of protective facilities (left pictures: previous, right pictures: present)

Large scale archaeological work enriched the knowledge of the canal heritage and deepened understanding the value of the canal, and greatly helped to

determine the nomination sites and provided basic documents for conservation, presentation and interpretation projects.

The preservation conditions of the heritage have been greatly improved. Protective facilities were built for some important archaeological sites, the local government also made land requisition around the sites and set up fences or walls, signs and boundary markers to ensure the safety of the sites.

The water quality of the canal and the environment has been significantly improved. The canal of the Qingkou Complex was dredged, some bridges and facilities were rebuilt and roads have been built for easy access for visitors to walk or cycle along the canal (Fig. 5).

Before and after the dredging of the canal



Bridges Trails



Fig. 5 Environment improvement of the canal

Presentation and interpretation projects helped people to have better understanding of the canal heritage. For heritage presentation and interpretation, some small halls were built for site exhibition, also other ways like open air presentation, shape (boundary) marking, small-scale model, glass cover presentation, signs and tour guide, were used to help people getting information and knowledge about the Canal (Fig. 6).



Fig. 6 Different ways of presentation and interpretation

AFTER NOMINATION: FOCUS ON THE CANAL HERITAGE RESOURCE UTILIZATION

After the Grand Canal was successfully listed as UNESCO heritage site in 2014, the Huai'an municipal government transferred their focus onto the canal heritage resources utilization.

One huge project was the "Inner Canal Cultural corridor" (ICCC, 15.6 km long canal section in the urban area) development (began in 2013). The construction area of the cultural corridor is 10.84 square kilometers, including two UNESCO heritage sites (Qingkou Complex and Qingjiang Lock) and hundreds of sub-projects, with a total investment about ¥ 26 billion (ICCCPDO 2013). According to the construction plan, the cultural corridor will include four tourism area and more than 30 scenic spots, as well as office buildings, hotels, cultural and creative industry parks and resident area. A government-sponsored company will be in charge of investment and finance, facilities construction, tourism marketing and other work. So this is actually an urban regeneration and development project.

Therefore, the conservation and management work of the Canal in this period has been in coordination with the ICCC project: investigations have been carried out within 100 meters on both sides of the canal, excavation of some sites in the cultural corridor construction area and an major lock site named Banzha have been found, some conservation plans for the protected cultural heritage have also been carried out. By comparison, there is almost no progress on the conservation of canal heritage outside the cultural corridor area.

So far, the cultural corridor is still in construction and we will continue tracking on its construction and conservation progress.

DISCUSSION

From the conservation work in Huai'an, we can know almost the entire heritage conservation work chain and procedures— archaeological work, research and evaluation, planning and policy-making, conservation and intervention, management and monitoring, interpretation and utilization, and also related issues with community involvement and public service, ecological conservation and social sustainability.

It could be said that Huai'an has made great efforts to implement the conservation and management plan for the World Heritage nomination and achieved lots of positive results. However, a careful check on Table 1-4 will lead the finding that, most of the conservation and management work were done between 2010 and 2014, the period of nomination, after which the planned work in medium and long term has not been carried out. Although it has not reached the deadline, it seems that most of the conservation work has been suspended.

There are many reasons for this phenomenon.

As we know, the Grand Canal is one of the most complex cultural heritages in the world: super large scale (2,700 km long in 2,500 years' history, throughout 8 provinces, 35 cities); encompass almost all types of cultural heritage, also many intangible cultural heritages; complex condition of preservation (still in use and abandoned, above the ground and underground, static and dynamic.); different roles in different department, multitudinous stakeholders and diverse interest appeals; numerous administrative agencies and cross jurisdictions, involving administrations of cultural heritage, water resources, transportation, land resource, planning, construction, city management, environment, tourism, etc. All these characteristics of the canal can be seen from Huai'an section which bring great difficulties for conservation and management works.

During the World Heritage nomination period, the coordination mechanism from the national level played a great role. An inter-ministerial consultation group of the central government, and also a provincial and municipal nomination alliance were established to solve the coordination problems between different administrative levels and departments. The conservation and management work was also strongly supported by the central funds (140 million in 2012, CACH 2016). However, after the nomination, systematic support from the national level is weakened, and works need to be done by the local government.

For the Huai'an city, it has not enough resource to continue supporting conservation works: with as little as an annual budget for all the cultural heritage conservation (¥7 million in 2015, compared with what it was in Hangzhou of over ¥130 million. It is impossible to get support from the central fund for daily maintenance and management (the central fund only support projects); conservation work are poorly man-powered (for example, the Archaeological Department of Huai'an museum has less than 10 archaeologist, but in Luoyang, the Luoyang Institute of archaeology has more than 130 employees, in addition to a work station in Luoyang from the Institute of Archaeology of Chinese Academy of Social Sciences). What is more, the heritage conservation branch is in a weak position in the city government, unable to coordinate with land issues, transportation, city planning and many other departments. Without support from state or provincial level, they can only do work in a very passive way. So in order to continue the implementation of the conservation and management plans, besides personnel and financial support, an institutional reform should be also considered.

BIBLIOGRAPHICAL REFERENCES

- Yu B. (2012), *The Grand Canal - Qingkou Complex Case Study on its Engineering Heritages*, in *Water shapes: Strategie di valorizzazione del patrimonio culturale legato all'acqua*, ed. by H. Porfyriou, L. Genovese, Roma, pp. 82-97.

- Southeast University, CACH (2009), *Heritage conservation plan of the Grand Canal (Huai'an section)*.
- Huai'an Municipal Culture, Radio Broadcasting, Film and Television Administration (2012) list of immovable cultural relics during the third national cultural relics survey in Huai'an <http://admin.huaian.gov.cn/web/gdj/2012/12/21/2728915.html> .
- CACH (2012), *Qinkou Complex on the Grand Canal- Comprehensive Research of Its Engineering Heritages*, Beijing.
- CACH, Huai'an Museum (2016), *Archaeological report of the Qingkou Complex*, Beijing.
- ICCC Planning and Development Office (2013), <http://lyh.huaian.gov.cn/index.html>
- CACH (2016), *Tracking on Large Archaeological Site Protection Scheme*, Beijing.

BUILDING THE CULTURAL HERITAGE SYSTEM OF THE GRAND CANAL - ZHEJIANG SECTION

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Keywords: the Grand Canal of China, Zhejiang Section, cultural heritage system

To develop the Grand Canal cultural heritage system, under the organization of the State Administration of Cultural Heritage (SACH), all-level governments and social forces along the Grand Canal in China, together with thousands of professional experts and teams, worked out a roadmap and framework upholding the principles of quick rescue, comprehensive conservation, and level-by-level administration. The dual-system, including the national Grand Canal of China heritage system and the world heritage nomination system, could be summarized as following:

First, based on preparation of respective special conservation plans of the Grand Canal at municipal-, provincial- and state-levels, heritage lists are defined as soon as possible, and their protection areas are delineated in a bid to conduct all-around protection and control along the Grand Canal.

Second, based on further in-depth researches, Cultural Relics Protected Units of different levels are promulgated so as to incorporate them into the long-term conservation & management legislation system.

Third, a pyramid-structured heritage system of the Grand Canal is developed with broad foundation and multi-level classification.

Fourth, a "sectional nomination" (Liu S. 2012) principle was formulated for the Grand Canal of China for World Cultural Heritage bidding, with priority on the property sections of "outstanding universal value".

INVESTIGATION AND EVALUATION OF THE ZHEJIANG SECTION ON THE GRAND CANAL

Before the nomination, the Canal in the southern regions of China, as a trunk traffic line, has always been in heavy use by barges of bulk raw material. It has also functioned as vital facilities for irrigation and flood discharging in Taihu Lake area. Therefore it has therefore not been considered as a cultural heritage identity to be investigated and conserved by the heritage sector, except for a few water facilities,

ancient bridges and architectures, and historical towns and cities along the canal that were listed separately as Cultural Relics Protected Units of different levels. As a result, no in-depth understanding of the basic components and values of the Grand Canal has been made without comprehensive investigation ever been organized for the Grand Canal. It was until 2006 when the Grand Canal was listed into the National Key Protected Unit of Cultural Relics as a unified heritage, and nomination for world heritage was put on agenda, that the research on the Grand Canal were systematically initiated.

Controversy over the scope of the Grand Canal in Zhejiang

Looking back at the long process of nomination for the World Heritage since 2006, Shaoxing and Ningbo in Zhejiang Province were the last two cities which joined, or were accepted to join, the other 33 ones¹ (Wang et al. 2008) in China for nomination. This was due to the understanding of the Zhedong (East Zhejiang) Canal.

There has been long-time misunderstanding of the river hydraulic conditions in Zhejiang. The Qiantang River, the southernmost of the five river systems that the Grand Canal connects, is characterized with tidal bores and sediment deposit movement driving by them at the river mouth. So the River is not as navigable as people from other areas have long taken it for granted that cargos between Hangzhou on the Grand Canal and the harbor city of Ningbo could take. Another misunderstanding is that the Zhedong Canal, which runs south of the Qiantang River linking Hangzhou and Ningbo has been thought as a natural river, therefore not eligible for cultural heritage designation for human works. The nomination effort organized by SACH caused concern by local water historians who have rich research results to show that the Zhedong Canal is a dual system of human and natural water system with over two thousand years tradition of engineering efforts. It has an especially important role in international trade and cultural exchange linking the harbor city of Ningbo to Hangzhou, and to the rest of inland China through the Grand Canal. With the strong argument, the Zhedong Canal was formally accepted into the nomination scope by the end of 2008 at the agreement between SACH and city governments of Shaoxing and Ningbo (Mei 2009). So the Grand Canal of China extends from the Jiangnan Canal (between the South Yangtze River to Hangzhou on the north bank of the Qiantang River) to the east coast in Ningbo.

1 In March 2008, the Grand Canal Conservation and Nomination for World Heritage Kick-off Meeting and Planning Preparation Workshop were held in Yangzhou, Jiangsu Province by SACH, Jiangsu Provincial Cultural Heritage Bureau, and the People's Government of Yangzhou. Officials from 33 cities along the Grand Canal signed a document of *Consensus on the Grand Canal Conservation and Nomination for World Heritage*.

The earliest section of the Zhedong Canal could date back to 5th BC during the Spring and Autumn Period named Shanyin Ancient Water Route and basically reached in its present form in the Jin Dynasty in 4th AD. The west 125km of the Canal from South Hangzhou is artificial water route, and the rest uses natural rivers of Yaojiang and then Yongjiang eastwards into sea, with a total length of over 400km. The engineering work on the water route features numerous weirs and water gates to ensure stable water level when intercross very developed natural river network in the region, advanced technology of using wood foundation and wood protection facilities, famous stone tracking roads and bridges for towing boats using man power due to its very leveling water (Fig. 1), and very developed ship building industry (Qiu 2013)



Fig. 1 A piece of the stone Track Path on the Zhedong Canal, Shaoxing, Zhejiang Province (Photo: B. Yu)

Stages of investigation work

During the period from 2006 to 2012, the Zhejiang Grand Canal Conservation and World Heritage Nomination Research Team was set up by the Zhejiang Institute of Cultural Relics and Archaeology. Under its organization and professional advice, investigation groups formed by local heritage site management organizations or

museums in Hangzhou, Jiaxing, Huzhou, and later on, Ningbo and Shaoxing cities carried out systematic field survey and documentation within the range of 500 meters on both sides of the Canal. About 1,500 cultural heritage sites have been identified and recorded.

During the process, the understanding to the Grand Canal's value experienced three stages: First, basic understanding of the Grand Canal's value had been achieved so as to be able to identify various heritage types of the Grand Canal; Second, further research had been carried out on its operations, functions and management system in order to understand its role in sustaining the empire through *Caoyun* system (transportation of grain); Third, based on the Convention Concerning the Protection of the World Cultural and Natural Heritage and its Operational Guidelines, re-evaluation was made with wider perspectives in the world history of canal evolution.

Evaluation of the Zhejiang Section of the Grand Canal

Based on the systematic investigation and analysis, the understanding the significance of the Zhejiang Section of the Grand Canal has been improved. The evaluation could be summarized in the following aspects:

First, it has a very prolonged history of construction as early as the excavation of the Ancient *Shanyin* Canal in Shaoxing City in the Spring and Autumn period (approximately 771 to 476 BC). It is the earliest section of the Grand Canal, with favorite natural conditions and longest time in continuous operation.

Second, it was the starting point of the Grand Canal (the end point in the Southern Song Dynasty) as the supply center (destination). With the requirement of transportation, the Canal system has kept been excavated and dredged, evolved into a radiating network consisting of main stretches, secondary stretches, tributaries and trickles.

Third, it took full advantage of natural waterways and tidal movement to organization transportation. Through linking and utilizing natural waters, a far-reaching network of canal system was developed with tremendous benefits in a very scientific and economic manner.

Fourth, Jiangnan area has always been a relatively developed and prosperous region in China. In fact, the Grand Canal in Zhejiang has promoted and supported specialization in production and development and prosperity of cities and towns. A very special water town ecology of nature and culture has been formed where the water system interweaves within cities and towns and beyond into the Canal. It is also, due to the benefit of the Grand Canal, one of the earliest areas to develop modern national industry and commerce.

Fifth, the development of the Zhedong Canal, efficiently connected inland water system with the eastern coast. The Ningbo Harbor on the east end of the Zhedong Canal has been an important national gateway linking the Grand Canal with the

Marine Silk Road, and onwards with a world-wide traffic network. Ningbo was a vital transfer harbor of *Caoyun* between inland and sea transportation, which played a unique role in sea transportation of *Caoyun* especially after Yuan Dynasty.

Sixth, at contemporary times, with the huge freight volume on the Zhejiang Section of the Grand Canal – 112 million tons in 2016, it still plays a significant role in water transportation (Fig. 2) and greatly supports the social, economic, and cultural development of the Yangtze Delta region.

Seventh, as one of the richest areas in China on the Canal of over two thousand years history, it boasts its leading role in social progress, ubiquitous and brilliant cultural and humanistic achievements, profound and deep historic roots, and rich culture heritage (Fig. 3).



Fig. 2 Jiangnan Canal (Chongfu-Chang'an Section)



Fig. 3 Qinghe Village of Tongxiang Township holds a Canal Fair on the Qingming Festival

THE GRAND CANAL OF CHINA (ZHEJIANG SECTION) CULTURAL HERITAGE SYSTEM

Grand Canal heritage in the national legislation system

On the basis of the Grand Canal evaluation as well as multi-disciplinary research organized by SACH, the Grand Canal of China heritage system can be classified into three levels corresponding to the pyramid planning system (Fig. 4). As a primary level, the municipal-level plans include the *Conservation Plan of the Grand Canal of China (Hangzhou Section)* (CAUPD, ZICRA, Hangzhou MCGCIC 2009), the *Conservation Plan of the Grand Canal of China (Jiaxing Section)* (CAUPD, ZICRA, JMCGCIC 2009), the *Conservation Plan of the Grand Canal of China (Huzhou Section)* (CAUPD, ZICRA, Huzhou MCGCIC 2009), the *Conservation Plan of the Grand Canal of China (Shaoxing Section)* (CAUPD, ZICRA, SMCGCIC 2009), and the *Conservation Plan of the Grand Canal of China (Ningbo Section)* (CAUPD, ZICRA, NMCGCIC 2010). As a secondary level, the *Conservation Plan of the Grand Canal of China (Zhejiang Section)* was completed on 2012 (CAUPD, ZICRA 2012). As the top level, the *Master Plan of the Grand Canal of China Heritage Conservation and Management* was prepared by China academy of Cultural Heritage and issued by State Administration of Cultural Heritage in 2013 (CACH 2013).

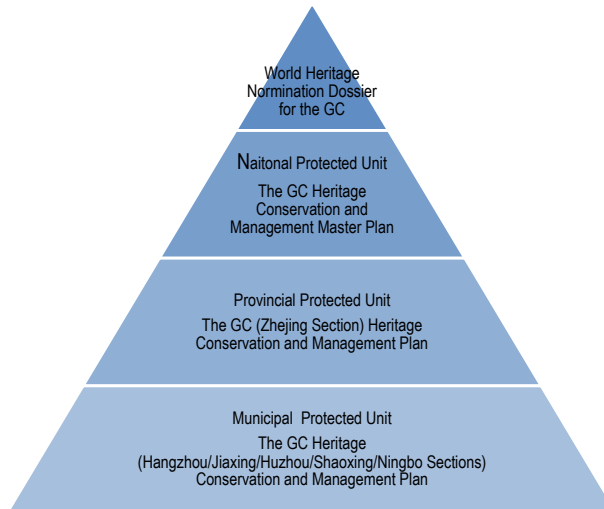


Fig. 4 The heritage system of the Grand Canal (Zhejiang Section)

In the plans of each level, a list Grand Canal heritage properties is identified, based on which the Protected Units of Cultural Relics of corresponding level are established. The heritage properties in the higher level plans are selected from the

lower level plans. Through the issuance of lower level plans, a certain power of protection could be soon exercised on all properties listed in the plans while the PUCRs are issued level-by-level and phase-by-phase to ensure formal legal protection.

As far as the Zhejiang is concerned, a three-level pyramid-structured Grand Canal heritage system has been formed through years' efforts under the combined guidelines of short-term salvage and long-term protection. According to the system, 279 heritage properties are included into municipal-level Grand Canal heritage list and municipal-level PUCRs and; 96 heritage properties are selected into provincial-level Grand Canal heritage conservation list and provincial-level PUCRs. The 96 heritage properties include 39 hydraulic engineering and transportation facilities for the Grand Canal, 22 towns and 3 villages on the Canal, 16 related historical sites, 3 ecological and landscape sites along the Canal, as well as 13 canal-related intangible cultural heritages. It covers wider categories and more properties than those included the national Master Plan. Among the 96 heritage properties, a total of 68 heritages are carefully chosen to be included in the national-level master plan. These 68 heritage sites are grouped into 22 national PUCRs, which include five sections of waterways, four sites on navigation and irrigation facilities, four ancient bridges (group of bridges), one towpaths, one dock, four sites of ancient canal auxiliary facilities and management organizations (a granary site, a customs office site, etc.), two sites related to canal culture (Fig.5). Take waterways as an example, 860 kilometers are included in the municipal-level heritage system, 683 kilometers in the provincial-level heritage system, and 413.6 kilometers of the waterways in the state-levels heritage respectively.



Fig.5 The Baijianlou Section of Ditang Old Waterway in Nanxun

The Grand Canal heritage in the world heritage system

The Zhejiang Section boasts nine waterways and 13 heritage sites listed in the world heritage sites. The 327-kilometer heritage waterways and 18 heritage elements are located in Jiangnan Canal and Zhedong Canal heritage properties. Its heritage area, buffer area and total area are 2,658 hectares, 10,321 hectares and 12,979 hectares, accounting for 12.76%, 19.57% and 17.74% of the property area of the Grand Canal of China, respectively. (Table 1). In addition, its 327 kilometers as a part of the Grand Canal of China is listed world heritage.

No.	Canal	section	Heritage properties
1.	Jiangnan Canal		
	Jiaxing-Hangzhou Section	Jiaxing-Hangzhou Section	
			Chang'an Floodgate
			Fengshan Water Gate, Hangzhou
			Fuyi Granary, Hangzhou
			Changhong Bridge
			Gongchen Bridge
			Guangji Bridge
			Qiaoxi Historical Street, Hangzhou
2.		Nanxun Section	Nanxun Section(Ditang Old Waterway)
			Nanxun Historical Cultural Street
3.	Zhedong Canal	Xiaoshan-Shaoxing Section	Xiaoshan-Shaoxing section
			Xixing Guotanghang Wharf
			Bazi Bridge
			Baziqiao Historical Cultural Street
			Ancient Towpath
4.		Shangyu-Yuyao Section	Shangyu-Yuyao Section(Yuyu Canal)
5.		Ningpo Section	Ningpo Section
6.		Ningbo Sanjingkou	Ningbo Qing'an Guild Hall

Table 1 Heritage list on Zhejiang Section

FEATURES OF HERITAGES IN ZHEJIANG SECTION

The features of Canal heritage system in the Zhejiang are as followings: First, heritages are well represented in type and balanced in distribution; Second, large proportion of the waterways are included in the nomination scope; Third, ancient water and navigation engineering facilities are paid much attention as material evidences to ancient technological evolution, way of production and management systems; Fourth, as the pearls of the Zhejiang Section, water towns alongside reflect the far-reaching impact of the Grand Canal on surrounding social, economy and culture development; Fifth, with the unfortunate progress of times, most of the management facilities have disappeared.

Based on the conservation system and the heritage list of the Zhejiang Section, on one hand, it can be found that the various kinds of heritages are protected to demonstrate the value of the Grand Canal of China, as well as advantageous resources and professional force are pooled to protect the authenticity and integrity of high-quality heritages of the Grand Canal of China. On the other hand, it proves that all-level cultural heritage administrative departments and professionals are sparing no effort to protect cultural heritages along the Grand Canal of China.

BIBLIOGRAPHICAL REFERENCES

- Liu S. (2012), the then president of Chinese Academy of Cultural Heritage, *Sectional nomination, integrated conservation – Observation and deliberation on the authenticity and integrity of the Grand Canal heritage*, Keynote speech at 2012 China Yang Zhou World Canal Cities Expo and World Canals Conference, September 26, 2012, <http://www.cach.org.cn/>
- Wang X., Xiang L. (2008), “33 Canal Cities reached an Yangzhou Consensus”, in *Yangzhou Evening Paper*, 25 March.
- Mei Z. et al. (2009), “The Zhedong Canal (Ningbo Section) first uncovered its veil”, in *Ningbo Evening Paper*, 8 May.
- Qiu Z. (2013), *An overall introduction of the Zhedong Canal*, in *Symposium of the Water History Research Association Workshop*, 30 November.
- China Academy of Urban Planning and Design (CAUPD), Zhejiang Institute of Cultural Relics and Archaeology (ZICRA), Hangzhou Municipal Committee of the Grand Canal Integrated Conservation (Hangzhou MCGCIC) (2009), *Conservation Plan of the Grand Canal of China (Hangzhou Section)*
- CAUPD, ZICRA, Jiaxing Municipal Bureau of Culture, Broadcasting, Media, and Publication (JMBCBMP) (2009), *Conservation Plan of the Grand Canal of China (Jiaxing Section)*

- CAUPD, ZICRA, Huzhou Municipal Bureau of Culture, Broadcasting, Media, and Publication (Huzhou MBCBMP) (2009), *Conservation Plan of the Grand Canal of China (Huzhou Section)*
- CAUPD, ZICRA, Shaoxing Municipal Bureau of Culture, Broadcasting, Media, and Publication (SMBCBMP) (2009), *Conservation Plan of the Grand Canal of China (Shaoxing Section)*
- CAUPD, ZICRA, Ningbo Municipal Bureau of Culture, Broadcasting, Media, and Publication (NMBCBMP) (2010), *Conservation Plan of the Grand Canal of China (Ningbo Section)*
- CAUPD, ZICRA (2012), *Conservation Plan of the Grand Canal of China (Zhejiang Section)*
- China Academy of Cultural Heritage-CACH (2012), *Master Plan of the Grand Canal of China Heritage Conservation and Management*
- CACH (2013), *The Dossier of the Grand Canal of China (for World Heritage Nomination)*

Note: in the above mentioned Bibliographical references of CAUPD, ZICRA, the author shows the institutes who prepared the plans. The final publication of the plans was by the name of governments of different levels: municipal governments, provincial governments, and the SACH on behalf of the central government

INFORMATION TECHNOLOGY APPLICATIONS IN THE MONITORING OF THE GREAT WALL

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Keywords: Information technology, information system, monitoring, the Great Wall, risk factor, data

“Monitoring is fundamental to understanding the processes of deterioration, as well as to identifying potential problems of Heritage Sites. Problems that cannot be dealt with through maintenance should be monitored regularly, documented, and collated. Monitoring data should be analyzed and become the basis for carrying out further conservation measures.” (ICOMOS China 2015, p.19).

Site monitoring involves investigating and assessing risk factors affecting the values of heritage sites, and determining the targets and methods of monitoring; regularly and irregularly collecting and recording monitoring data; analysing and judging the state of preservation and dynamic trend of the Outstanding Universal Values of heritage; and proposing countermeasures and management suggestions.

In order to improve management of the Great Wall, development of a special monitoring system is organized by State Administration of Cultural Heritage (SACH) since 2016 and commissioned to China Academy of Cultural Heritage (CACH). Considering the unique features of the Great Wall, the system will be separate from, though compatible with, the World Cultural Heritage Monitoring and Warning Master Platform (Zhao 2017). The first step is to understand the specialty of the property, its management context and risk factors.

SPECIALTY OF THE GREAT WALL HERITAGE AND ITS MANAGEMENT

Through years of integrated efforts in the Great Wall conservation organized by SACH, an initial overall understanding of existing situation of the Great Wall has been achieved based on a national survey and documentation, with the help of Spatial Information Technologies (SIT). Of course this is just the beginning to unveil the extremely rich and complicated gigantic heritage.

Previous work providing useful basis

During the period from 2006 to 2011, a national-wide Great Wall Resource Survey (GWRS) was organized by the State Administration of Cultural Heritage (SACH) and National Administration of Surveying, Mapping and Geo-information (NASMG). It was the unprecedented effort of comprehensive and scientific survey in the territory of China covering Great Wall resources of all ages. SIT was used throughout the process, with data - archaeological and geographical, text and multimedia - collected, stored and analysed based on the Great Wall Resources Management Information System (GWRMIS) (Yu et al. 2015).

As the result of GWRS and the official identification work afterwards in 2012 by SACH, a total length of 21196km of the Great Wall, and 43721 elements and facilities (walls and trench stretches, watch towers, signal towers, barracks, passes and forts, and auxiliary facilities) are recorded. They were built during the Spring and Autumn Period, Warring States, Qin and Han, Northern and Southern Dynasties, Sui, Tang, Five Dynasties, Song, Liao, Jin, Western Xia and Ming dynasties (5th BC to 17th AD), and distributed in contemporary 15 provinces (autonomous regions and municipalities), 97 cities and 404 counties (CACH 2017, pp. 47).

After the GWRS, the development of the GWRMIS continues, to integrate and update as much information as possible from front-end work of daily management, restoration projects, research projects and legislation bibliographies (Fig. 1). The GWRMIS has developed into a comprehensive platform with functions of logging, storage, modification, retrieval, and statistics, to provide information for Great Wall conservation, utilization, management and research.

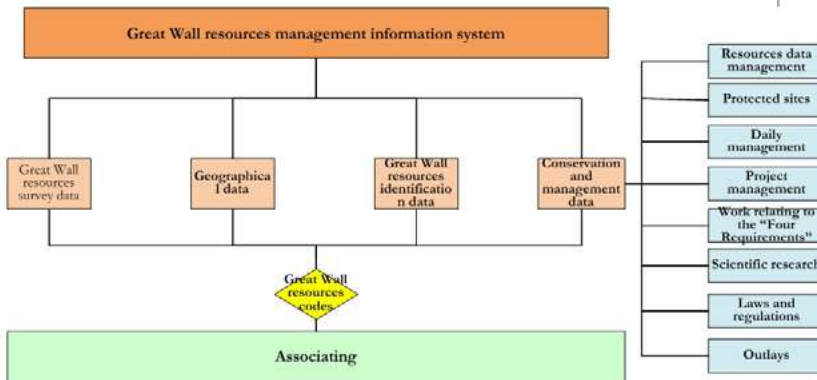


Fig. 1 Data structure chart of the Great Wall resources management information system

GWRMIS, combining with other internet information technologies (see the section hereafter), provides a useful tool for risk factor analysis in developing the Great Wall monitoring system.

Special challenges of the Great Wall monitoring

The scale and complexity of the Great Wall resources, its decentralized management system, and the huge information data that would incur, all posed special challenges to the development of an efficient and effective monitoring system for the Great wall.

1. Balance of impact analysis between macro- and micro-dimension of risk factors. The understanding of macro-level impact of natural, social and economic environments are indispensable for the Great Wall as it is so ubiquitously embedded within them and closely depended and interacted with them. Yet it is also very imperative to attend to the micro-level specific issues of risks to various individual sites and portions, built at different times, of different materials, with different context, to be able to be responsive in timely management. Careful design should be made in a multi-dimensional, integrated, diversified and yet feasible way in this regard.
2. Balance between technology application and human resources adaptive to existing management system. The daily management of the Great Wall involves a very decentralized system of over 600 site management agencies and numerous land and property owners and users (Yu 2018). While site managers are crucial to the operation of the monitoring system, technologies of different scales are also instrumental to help managers in data collection, communication and analysis to improve efficiency, standardization and social involvement.
3. Balance between top-down and bottom-up routes of monitor content identification. In addition to existing massive data of text, photos, drawings, maps and other visual data, there will be more and more massive data pooling in from agencies and public long the 20,000 km long Great Wall. The monitoring system should not lose a holistic vision while allow for a self-learning and self-adjusting mechanism in data collection and processing.

With this in mind, two types of work are being carried out using information technology. The first is risk factors statistics and analysis on the macro-level basis. The second is a mobile-phone-based application developed for daily monitoring data uploading and managing.

PRELIMINAR ANALYSIS OF RISK FACTORS BASED ON THE INFORMATION DATABASE

Preliminary statistics and analyse of risk factors for the Great Wall were performed using the first-hand GWRS data through GWRMIS. The analysis is made on the unit of counties where the building materials, state of preservation and other intrinsic characteristics of the Great Wall and the natural and cultural environments are largely the same, and China’s heritage site conservation and management system is primarily based on local management at the county level.

Risk factors, investigated during GWRS, can be divided into natural factors and human factors, and subdivided into 14 and 22 categories, respectively. Based on such classification, keywords of the descriptive information about damage to Great Wall remains in the GWRS data were searched. For example, searching the word “rain”, related natural factors such as “rainwater erosion”, “rainwater seepage” and other rainwater erosion risks could be found.

Natural factors, according to their occurrence and process of evolution, can be further divided into natural erosion and natural disasters. There are 10 types of natural erosion, including river erosion, rainwater erosion, soil erosion, desertification, wind erosion, salination, freezing and thawing, plant growth, animal damage, and mould on walls. Natural disasters include earthquakes, debris flows, lightning strokes, and other geological disasters. The top four natural factors that have the greatest coverage of influence are: rainwater erosion, wind erosion, plant growth, and animal damage (Fig. 2).

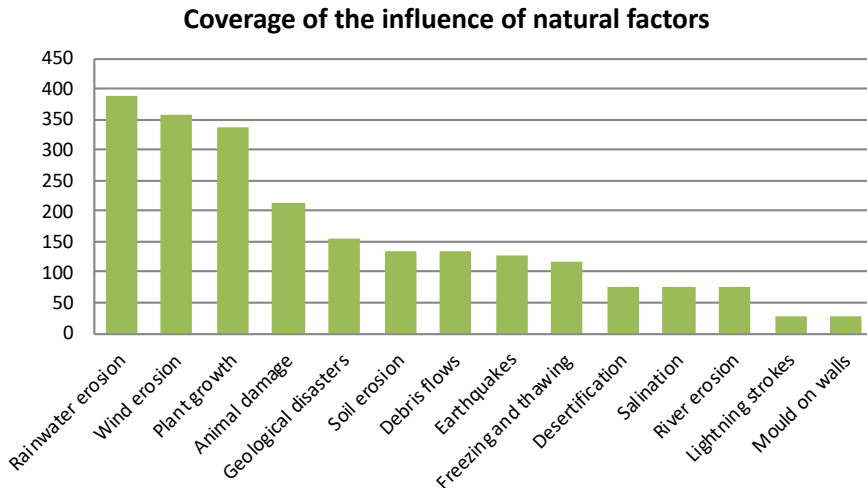
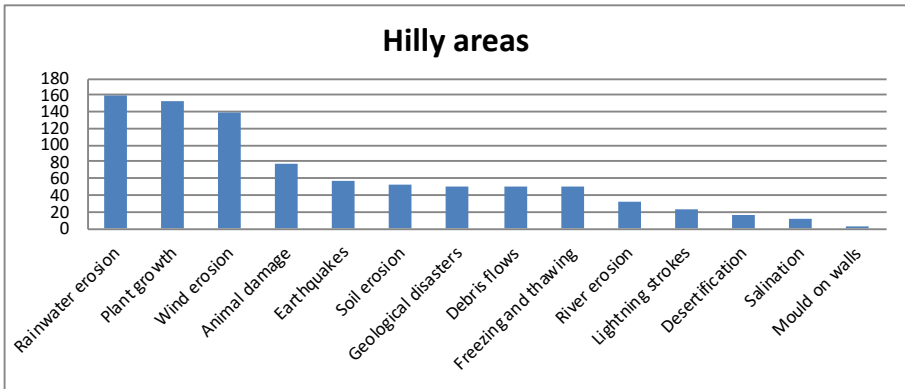
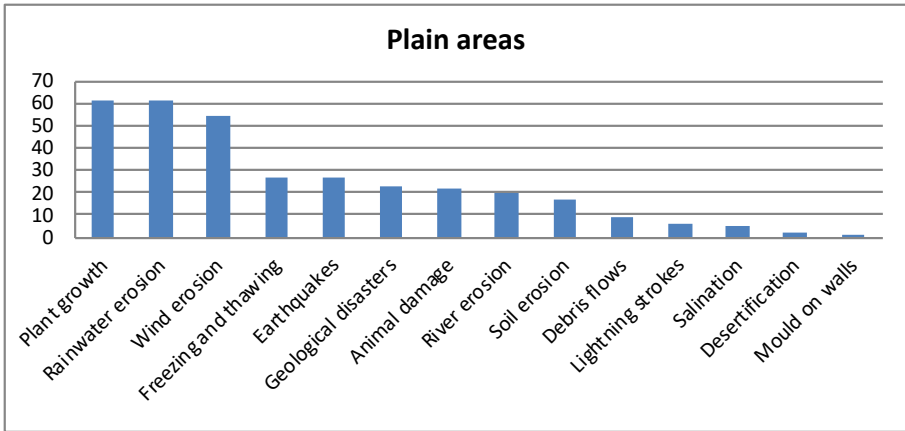


Fig. 2 Coverage of the influence of natural factors affecting the Great Wall

The large-scale spatial distribution of the Great Wall makes the natural and geographical environments of the areas through which the Great Wall passes highly complex and varied. The linear Wall are distributed in 317 counties, where 74 are in plain areas, 176 in hilly areas and 230 in mountain areas. The damage caused by natural forces to the Great Wall is closely related to their geographical conditions. Statistics are made to understand what are the major natural factors at different geographical conditions (Fig. 3).



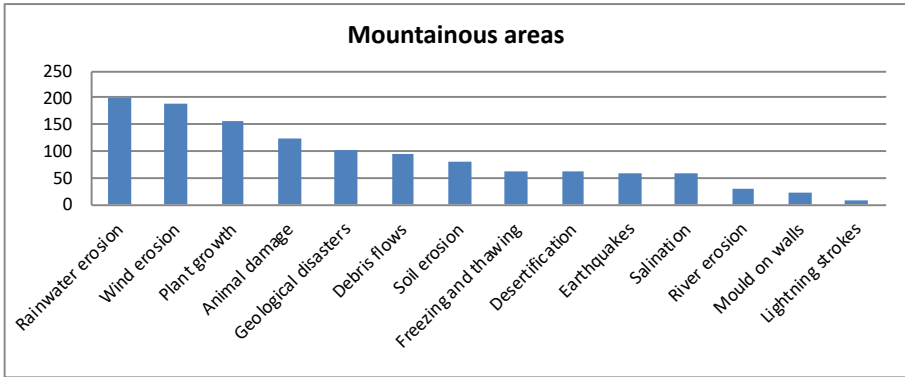


Fig. 3 Landforms of the areas through which the Great Wall passes and the numbers of counties associated with the natural factors

In addition, the types of land uses, through which the Great Wall passes, are also complex. Land uses shows human activities and land transformation, which is potentially connected to human risk factors to the Great Wall. According to the Current Land Use Classification (GAQSIQ 2007), the Wall are primarily distributed on 18 types of land. Arable land, grassland, forest land, shrub land, other woodlands, and housing areas are the top 6 uses (Fig. 4).

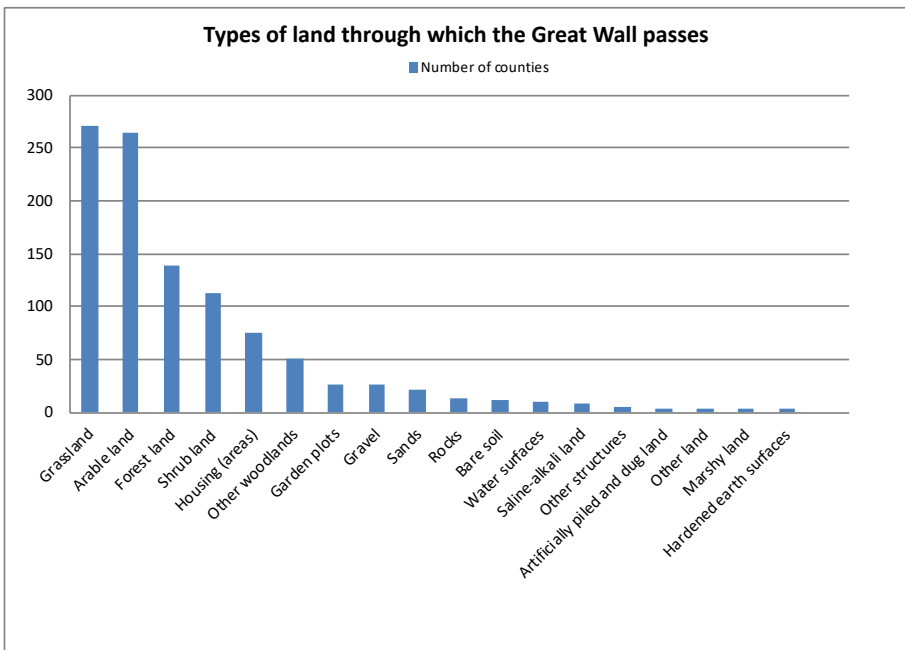


Fig. 4 Types of land through which the Great Wall passes

Human risk factors are categorized in 6 groups: tourism development, damage caused by conservation activities, inhabitants' activities of living and production, construction of large-scale infrastructure, urban and rural development, and others. They can also be subdivided into 22 sub-risk factors such as improper presentation, excessive exposure to visitors, improper repair and improper excavation, etc. The most influential human factors are production and living, farming, road facilities, grazing and animal husbandry, housing construction, and afforestation (Fig. 5).

Based on analysis of risk factors, and using the geographic data of the Great Wall in GWRMIS, a map of the risk factors distribution can be created.

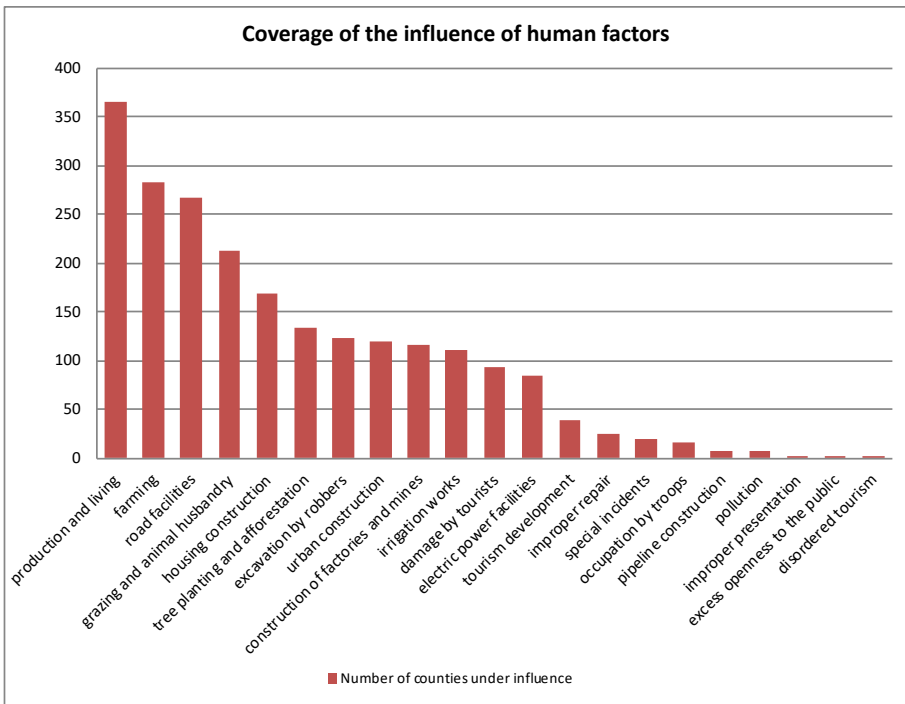


Fig. 5 Coverage of the influence of human factors affecting the Great Wall

THE USE OF MOBILE-PHONE-BASED DATA COLLECTION TECHNOLOGY

Data collection for Great Wall monitoring involves management data and the data of the Great Wall and its environment. GWRMIS supports periodical management

data online submission, review, and maintenance. The monitoring data about the Great Wall itself and its environment need to be collected largely by people, because the installation of surveillance equipment is almost impossible for the sheer scale of the Great Wall and the cost thereof, and there is not the necessity to install all along the lines, except for certain critically key stretches and sites.

A mobile-phone-based data collection APP has been under development by CACH since 2017, based on platform of GWRMIS with integrated electronic maps and GWRs data. The APP is open to two types of users: internal workers, and the public. Data collection can either be initiated by management ends of different levels, say, for an emergent event reporting, to commission a task, or undertook as routine patrolling task. The public, either as a visitor, or a resident living along the Wall, can also register and upload their pictures or text reports. The existing site information and pictures from the GWRs can be retrieved on the phone quickly through positioning technology, against which new pictures from similar perspectives may be taken and uploaded for easy comparison. There is also path-sharing function to ensure that certain requirements of patrolling are met (Fig. 6).

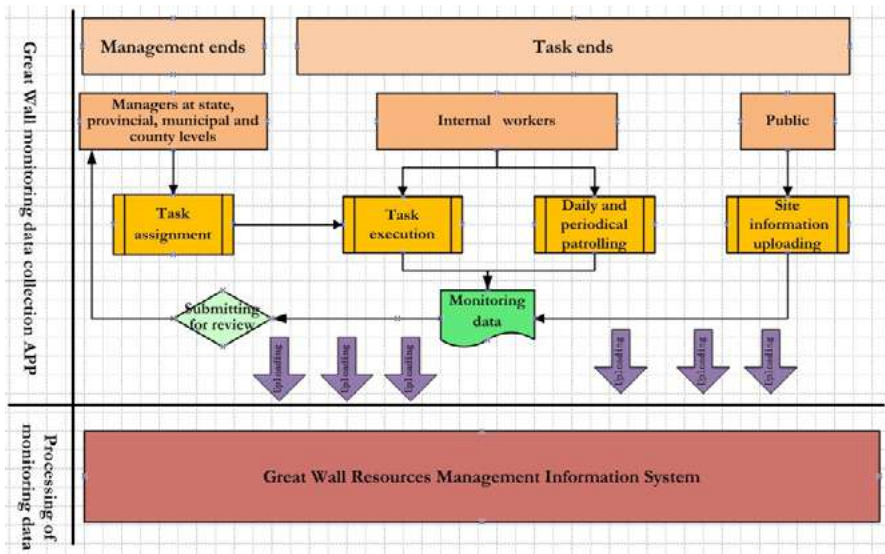


Fig. 6 Workflow of Great Wall monitoring data collection

The intended goals of the mobile phone APP exceed mere collection of monitoring data in several aspects.

First, to ensure standardized and uniformed collection of data. The Great Wall daily patrolling work involves thousands of internal workers spreading along the vast regions, including professional staff from site management agencies, law enforcement workers of different levels, and recruited farmer patrollers from nearby towns

and villages. Traditionally, the contents and quality of their patrol records vary a lot, or even do not exist at all. Monitoring data collection records, if there is any, are largely made on paper, which are very fragmented, making them hard to use for processing and analysis. The development monitoring data collection APP on mobile phones can help formalize the recording behaviour of the staff and recruited patrolers, and pool together bits and pieces of monitoring data into valuable database.

Secondly, to crowdsource daily patrolling responsibilities from the public. Compared with the enormous size of the Great Wall, internal workers in the scale of thousands for daily patrolling are far from enough. There are numerous land owners and users, and visitors and hikers along the Great Wall who can be mobilized to work for the Great Wall through the application of modern internet and information technology.

Thirdly, to build up database for a self-learning mechanism of smart monitoring. Due to the extreme complexity of the Great Wall monitoring, it is very difficult to design an ideal system of monitoring in a top-down way with accurate contents and indicators identified at the beginning. The use of phone-based APP might provide useful technologies that goes the bottom-up way for massive data collection and data-mining analysis to help developing into a self-adjusting monitoring system for a better mechanism of early risk warning.

DECISION MAKING AID BASED ON INFORMATION TECHNOLOGY

Site monitoring is not only an independent technical measure to collect, analyse and assess data using diverse technical measures, but also a way to improve management. It is an integrated part of cultural heritage management. The GWRMIS has already provided important technical support to the Great Wall conservation and management at all levels. For example, in the first Special Inspection of Great Wall Law Enforcement organized by SACH in 2016, key inspection indicators were identified through comprehensive evaluation of the ten-year data in all aspects of work in all the regions along the Great Wall based on GWRMIS (CACH 2017, pp.116).

The development of monitoring system on the basis of GWRMIS and other mobile technologies will further facilitate re-engineering of traditional operational systems, and provide better aid to the Great Wall conservation management and decision-making. The protection and management of large cultural routes has always been a challenging issue worldwide. The application of information technology to Great Wall resources surveys, identification and monitoring is undoubtedly a useful exploration into the management of very large-scale cultural heritage sites, and shows us the prospect of modern information technology-based cultural heritage conservation.

BIBLIOGRAPHICAL REFERENCES

- China Academy of Cultural Heritage (2017), *Love China and Protect the Great Wall—Protection of the Great Wall (2006-2016)*, Beijing.
- General Administration of Quality Supervision, Inspection and Quarantine of China, Standardization Administration of China (2007), *Current Land Use Classification (GB21010-2007)*.
- ICOMOS China (2015), *Principles for the Conservation of Heritage Sites in China*, Beijing.
- Yu B., Xu L. et al. (2015), “Application Advancement of Spatial Information Technology in the Great Wall Resources Survey”, in *China Cultural Relics Scientific Research*, 1, pp. 67-73.
- Yu B. (2018), “Integrated Conservation of the Great Wall: Challenges and Practices”, in *China Cultural Heritage*, 3, pp.31-40.
- Zhao Y., Xu L. (2017), *China’s World Heritage Monitoring*, Beijing.



N°3

ITALY & CHINA

*Joint Initiatives for
Cultural Heritage*

CHINA AND ITALY: ROUTES OF CULTURE, VALORISATION AND MANAGEMENT

The Bilateral project *Routes of culture: enhancement and management of large scale heritage sites. Via Appia - Roman Consular street - and Grand Canal of China* was financed by the National Research Council of Italy (CNR) and the Chinese Academy of Cultural Heritage (CACH) for the period 2016-2018. The research undertaken by the two teams aimed to promote a better understanding of cultural heritage conservation, valorisation and management policies and tools in the two countries particularly with reference to big scale heritage sites.

The initiative launched in 2016 by the Italian Ministry of Cultural Heritage and Activities (MiBACT) promoting the candidacy of the entire Appia Antica as a cultural route and know as the "*Appia Regina Viarum*" project, led us to extend our collaboration to MiBACT. This volume presents the outcome of this collaboration between the three institutions, enhancing mutual knowledge and promoting a long lasting cooperation among the two countries on conservation, valorisation and management of big heritage sites and cultural routes.

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