XVII International Congress on Dry Stone

"Dry stone perspectives: challenges after the UNESCO inscription"

Cavtat, Croatia, October 1-2 2021

Ioulia K. Papaeftychiou

PhD Architect NTUA

ioulia955@gmail.com

Dry stone constructions in Greece. Their value and their devaluationi[1]

Summary:

Stone, according to archeological findings and the history of architecture, was and still is one of the basic building materials in human constructions, worldwide. In particular, the "dry" use of stone, i.e. without binding mortar, has been the dominant technique for the construction of the oldest monuments on the planet. However, with time and the subsequent use of metallic fasteners and mortars, the technique of dry stone walling was limited to simpler constructions, mainly buildings in the countryside. Since ancient times and at least to the mid-20th century, "dry" walling has been the most widespread technique across the length and breadth of the earth, in continental and insular regions with sloping terrains. The geomorphology of the terrain in these areas and the need to create arable land in the context of agricultural activities resulted in the construction of terraces. The most suitable solution for the support of terraces was the construction of retaining walls made of dry stone, using the rocks available in each area as raw material. Many times, the creation of terraces led to long lasting results, impressive from a static point of view. The case of Machu Picchu in Peru, considered the most important

1 *Paper with the same title and similar contents based on the data available at the time was presented in 2011 at the 11th Panhellenic Conference of Architects of SADAS – PEA "Profession Architect", held at the Zappio Hall in Athens, 17 to 20 March. The paper, without photographic material, was uploaded on the internet, while no proceedings of the conference were published in print.*

agricultural monument of antiquity, is indicative. Nowadays, terraces are still used in the sloping areas of the world where inhabitants are mainly engaged in the cultivation of rice.

This paper focuses on dry stone structures which, despite their age and multilevel significance, have not been classified as monuments. Yet, they are key components of the landscape, whether as complexes or as stand-alone buildings, always within the framework of the environmental discourse. Besides, the dry stone structures characterized as monuments are, to a greater or lesser degree, in the care of the ubiquitous archeological services. Inevitably, one is led to compare the treatment accorded to dry stone constructions in developed countries with the treatment reserved for them in our country, "ringing the alarm bell" about the obliteration of these "humble" constructions of diverse presence and multiple value in an effort to raise awareness in at least a portion of the citizens.

Keywords: *dry stone constructions*

The value of dry stone structures

Terraces are the most common dry stone construction. Despite their current abandonment in many parts of the world, they characterise the rural landscape in a significant way, giving it a high aesthetic and cultural value.

Fig.1: Despite the current abandonment of terraces in many parts of the world, they characterize the rural landscape in a significant way, giving it a high aesthetic and cultural value.

The abundance and variety of stones (i.e. the raw material) in combination with the peculiarities of each region and the local tradition in construction, led to admirable results from a technical and aesthetic point of view. Any stone found locally, depending on its crafting properties, ended up in useful retaining walls, showing the skill of the craftsmen and the wise use of the material, but also the respect man had for nature. The constant use of terraces, dating back to ancient times, makes them carriers of historical memory, as well as carriers of information on a variety of techniques.

The ecological value of terraces is also indisputable, since they contribute the utmost to biodiversity, being a fundamental habitat for many species of fauna and flora, while at the same time preventing soil erosion. Dry stone retaining walls offer shelter to various species of reptiles and insects, on which birds and small mammals feed, before they themselves fall prey to larger mammals. A variety of plants grow in the gaps of dry stone retaining walls, while some others are favored in their growth by the microclimate created on the edges of the walls.

Special mention must be made of the importance of terraces for the protection of slopes against erosion, in light of climate changes and the desertification threatening entire geographical areas.

Fig.2: Special mention must be made of the importance of terraces for the protection of slopes against erosion, in light of climate changes and the desertification threatening entire geographical areas.

However, farming in sloped areas, besides the creation of terraces, required in the past the building of various works and constructions.

Fig.3: Farming in sloped areas, besides the creation of terraces, required in the past the building of various works and constructions

The same raw materials, i.e. the stones found in each area, and dry stone technique were used to build networks of stone and slab paved pathways, bridges and

retaining walls in roadworks, stream and river canalisation works as well as water management works, land ownership delimitation walls, crops and pasture fencing, paddocks, stables and “bee houses”, permanent or seasonal lodgings, and even huts sheltering small fishing boats on the coasts of numerous islands. In the case of remote and inaccessible areas, entire seasonal settlements were created from dry stone. Dozens of smaller, varied structures such as beehives, wells and troughs, completed the range of dry wall constructions.

Fig.4: The stones found in each area and dry stone technique were used to build a variety of constructions, and even huts sheltering small fishing boats on the coasts of numerous islands.

Furthermore, in the context of the economic activities of the secondary sector and before the advent of reinforced concrete, most pre-industrial facilities were made of dry stone. In addition, therefore, to terraces and the various drystone buildings that usually accompanied them, one must mention lime kilns, watermills, windmills, treader vats, oil mills, tanneries, threshing floors and ovens. Common needs in the exercise of agricultural activities in different countries of the world, led as a rule to similar building solutions[2]. However, one often encounters special dry stone structures that characterize entire geographical regions or individual areas such as the "trulli" in Apulia, Italy, the snow storage facilities in

2 Extensive references can be found in the volumes of the proceedings of the conferences of the S.P.S. (Société Pierre Sèche: Société scientifique internationale pour l’ étude pluridisciplinaire de la Pierre Sèche) contact@pierreseche-international.org, website: www.pierreseche-international.org (see Bibliography: S.P.S.).

France, the stopping walls against avalanches in Switzerland and the gigantic drystone structures of the slate industry in Northern Wales.

Fig.5: Common needs in the exercise of agricultural activities in different countries of the world, led as a rule to similar building solutions.

Over time, the changes brought about by mechanization in the primary and secondary sectors, led to the progressive abandonment of terraces, so that today they are at risk of complete obliteration. The same course was followed by all other dry stone structures, which are bearers of historical memory and information on past production systems and know-how - as are terraces – something which gives them a distinct historical and cultural value. An initial analysis of the historical and cultural value of dry stone structures shows that it encompasses archaeological, sociological, ethnological, symbolic, architectural, technological, agricultural, as well as economic values. Fully justifiably then, terraced landscape and the various dry stone structures are objects of great research interest - at least at international level - which, with their age-long presence, require a diachronic and interdisciplinary approach, since they touch on almost all expressions of human life.

Finally, it would be an omission not to mention the high emotional value of all dry stone structures for any cognisant observer. It is a fact that "with the first approach,

the spaces of the terraces are perceived as a whole, as a landscape, which immediately causes surprise and admiration"[3] No one is left untouched by the terraced landscapes that can make an entire island look "handmade"[4], by "the unsurpassed beauty of golden bare landscapes with primeval walls"[5], by "these jewels of the stony and rugged landscape"[6], by a "countryside movingly beautiful as it is embroidered in stone and human toiling"[7].

The management of dry stone structures

In developed countries, the interest of agencies and citizens for the protection, the promotion, but also the utilisation of dry stone constructions, either as components of the landscape or as autonomous structures, is granted[8]. In Europe, the numerous funding programs related to dry stone constructions are being fully implemented, through the cooperation of various agencies. The range of these programs is very broad, covering all actions related to dry stone structures, from field surveys for recording and maintenance purposes to the production of modern art works. Particularly important for the preservation of the tradition associated with dry stone structures, is the training of young people in the art of dry stone walling.

3 As mentioned by Pangratiou, E. in "For a piece of land: The terraces in the Cyclades", Paper presented at a day conference at the Agricultural University, Athens, 11.02.2003.

4 As Nisyros is called by Petanidou, Th., "Retaining walls (vastadia) and terraces (tavles): Carving the landscape of Nisyros", Nisyriaka, v. 15, Athens: Nisyrian Studies' Society, 2005, pp. 212–255.

5 As Metallinou, B. describes the landscape of Amorgos in "The primeval walls", www.diktioaigaiou.gr/contents/media/File/Arxegonoi%20Toixoi.doc (accessed: 17.02.2011)

6 As Martinos, N. calls drystone fencing in "Rural landscape: Adaptations to the extent to need", in Louloudis, L. – Beopoulos, N. – Troumpis, A. (edit.), The rural landscape: The palimpsest of centuries of agricultural labor, Athens: Merkouri Estate, Korakohori, Ilia, 2005, pp. 147-152. Also: "The vanishing insular landscape", Athens: Ardin Magazine, v. 54, June – July 2005, pp. 71-74.

7 As Papaeftychiou, I.K. calls the countryside of Chalki in "Constructions in the countryside of Chalki", Periodic Scientific Publication Dodekanisiaka Chronika, v. XIII, Rhodes: Stegi12, 2008, pp. 316-355.

8 Some websites useful in order to get an idea on how dry stone structures are managed in developed countries are listed below:
Europe: pierresecheinternational.org (FR), pierreseche.net (FR), Drystone heritage, Dry Stone Walling Association of Great Britain (GB), SalveWeb.it (IT), Casetas y casetones (ES), aREPS: Réseau Européen de la Pierre Sèche, Fondation Actions en Faveur de l'Environnement (Suisse), pierresecheinternational.org (FR), Australia: A Stone Upon A Stone, America: Dry Stone Conservancy (USA), The Dry Stone Wall Association of Canada (DSWA - Canada), Other countries: D'autres sites étrngers.

Unfortunately, until quite recently, no similar interest manifested itself in Greece, if not occasionally and by individual entities and persons. The active involvement in landscapes by institutions and individuals started only in 2003, even though the organization of international conferences on dry stone structures in 1992 in Crete and in 2004 in Lesbos did not bring about the expected awareness of the scientific world and citizens[9]. On the contrary, the International Conference held in Cephalonia in 2016 had a particular resonance given the inclusion of the art of dry stone in the UNESCO National List of Elements of the Intangible Cultural Heritage of Greece, in June 2015.

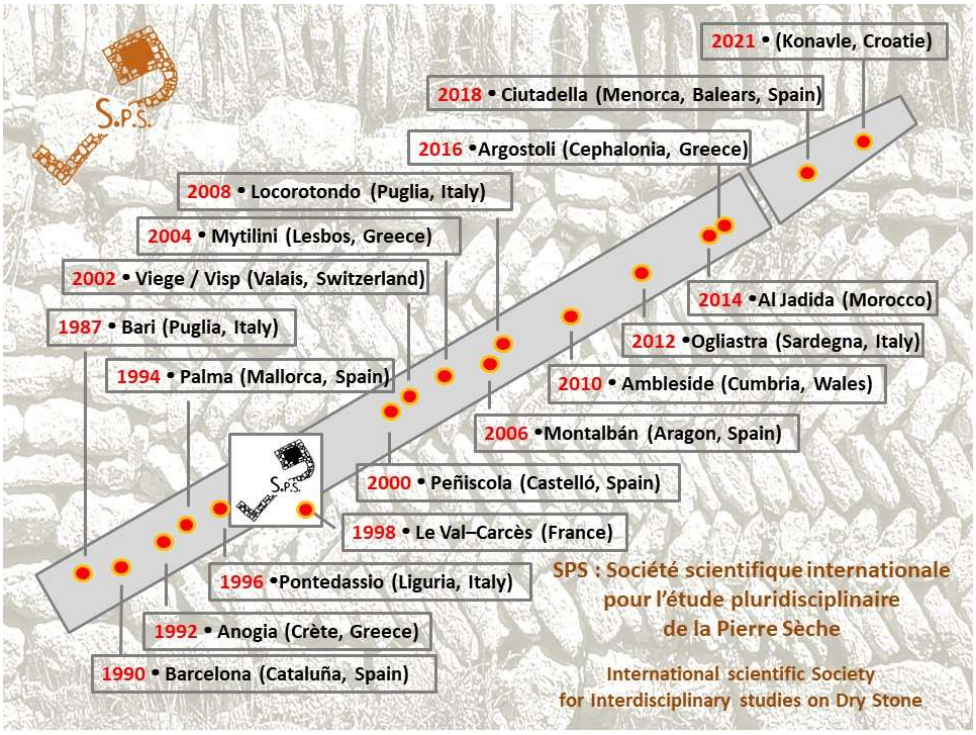

Fig.6 : The seventeen (17) international conferences on dry stone constructions that took place from 1987 to 2021.

9 Between 1987 and 2018, the S.P.S. (Société Pierre Sèche) has organized in Europe 16 international conferences on dry stone structures. 1o: 1987 in Bari (Apulia, Italy), 2o: in 1990 in Barcelona (Cataluña, Spain), 3o: in 1992 at Anogeia (Crete-Greece), 4o: in 1994 at Palma (Mallorca, Spain), 5o: in 1996 at Triora (Liguria, Italy), 6o: in 1998 at Le Val (Carcés, France), 7o: in 2000 at Peñiscola (Castelló, Spain), 8o: in 2002 at Viege (Visp–Valais, Switzerland), 9o: in 2004 at Mytilini (Lesbos, Greece), 10o: in 2006 at Montalbán (Aragon, Spain), 11o: in 2008 at Locorotondo (Apulia, Italy), 12o: in 2010 at Ambleside (Cumbria, Wales), 13o: in 2012 at Ogliastra (Sardegna, Italy), 14o: in 2014 at Al Jadida (Morocco), 15o: in 2016 in Argostoli (Cephalonia, Greece) and 16o: in 2018 at Ciutadella (Menorca, Baleares, Spain).

From October 2018 onwards, immediately after the inclusion of dry stone in the UNESCO Representative List of the Intangible Cultural Heritage of Humanity, there was an explosion of interest in the media, resulting in the expression of similar interest by institutions and individuals.

Regarding the European programs on dry stone constructions, Greece is present in some of them as a partner, either with the participation of educational institutions, or with the participation of development companies and local agencies. After 2018 and the international recognition of the art of dry stone walling, Greece's participation rate has been growing compared to that of other European partners and there is hope the benefits of these program will have continuity and duration.

Auspiciously an interdisciplinary interest for the landscape has been observed in recent years, mainly from geographers, agronomists, biologists, urban planners, environmental historians and landscape architects. Yet, this interest remained rather theoretical until quite recently, given that the Parliament ratified the European Landscape Convention only in February 2010. Fortunately, extensive references to the "humble" dry stone constructions started appearing in the scientific meetings dedicated to the triptych "Environment - Landscape - Architecture" - rightly so, since dry stone structures are present in the largest section of the geographical space occupied by Greece.

The rural landscape in Greece, according to the typology of rural landscapes in Europe, consists of "*open cereal plains in the Mediterranean, sometimes with tree-growing zones, compact settlements and scattered intermediate construction, as well as pockets of irrigated / intensive crops and orchards*"[10]. This definition however could be deemed too general and incomplete to the extent that it completely ignores the islands and the mountainous landscapes which have terraces as their dominant feature. The wealth of dry stone structures in Greece, from a morphological and typological approach, is quite impressive. Nevertheless, there is no full recording of these structures in Greece and the

10 From Beriatos, I., "The landscape and the landscape policy in Greece" in: Papagiannis, Th. – Sorotou, A. (edit.), Mediterranean Institute for Nature and Anthropos (Med-INA), In search of the Greek landscape, Athens: Med-INA, 2010, p. 24, with a map of the typologies of rural landscapes in Europe as published by Lebeau, R., Le grands types de structures agraires dans le monde, Paris: Masson, 1979.

relevant bibliography in Greek just now begins to be enriched. The saddest thing is the deliberate destruction of dry stone complexes, in the name of development, for the construction of modern accommodation.

Therefore, it is worth mentioning the appearance of educational programs and diploma theses in the HEIs as well as publications in the daily press and magazines or internet postings dedicated to dry stone constructions. Usually, these publications link the need for the preservation of dry stone structures to their ecological value and the environment. Nevertheless, in combination with the efforts made by various individual bodies, they contribute to informing and raising public awareness. Finally, it would be an omission not to mention the favorable climate that had begun to form in relation to dry stone structures in Greece, in the midst of the economic crisis, as oxymoronic as it may seem. The economic data for 2010 showed an 8% increase of the rural population, with the main orientation being organic crops. In absolute numbers, it was estimated that an additional 60,000 persons had opted for rural professions and, as a rule, had moved away from the large urban centers and settled in the countryside.

Conclusions

To summarize, given the value of dry stone structures, we are led effortlessly to the following conclusions:

1. The wealth of dry stone constructions in Greece is an untapped capital, with investment prospects in the fields of environmental protection and economic growth, consequently in agriculture - mainly in organic farming - and alternative forms of tourism.
2. The course of devaluation of dry stone structures in Greece seems to be reversed in recent years, mainly due to the interdisciplinary interest in terraced landscape.
3. The legal framework for fruitful results in the fields of protection, promotion and utilization of dry stone structures, started being finalized the moment the European Landscape Convention was ratified by Parliament in February 2010.
4. The process of raising public awareness in relation to dry stone structures is on the rise, through information and local actions undertaken by organizations and individuals in areas with dry stone buildings with a view to promoting

active participation, but also mindful of the benefits stemming from the development of agriculture and alternative forms of tourism.

5. The economic crisis boosted the recovery of agriculture, with the settling of new younger human resources in the province, giving growth prospects also to areas with terraced landscapes and dry stone structures.

6. The inclusion of the art of dry stone in the UNESCO National List of Elements of the Intangible Cultural Heritage of Greece, in June 2015 and then the representative data list of the UNESCO Representative List of the Intangible Cultural Heritage of Humanity in October 2018, gives another dimension to dry stone buildings, as a result of its implementation.

Comparing the interest shown by developed countries for dry stone structures with the disregard and debasement recorded in Greece, the need to raise the awareness of both younger researchers and scientists, as well as citizens, becomes imperative.

In conclusion, it is emphasized that this need is intertwined with the future of the planet and climatic change to the extent that the most common and simplest dry stone construction, the retaining walls of terraces, can make a real difference in preventing prevent soil erosion and consequent desertification of the Greek landscape, especially in the Aegean islands.

Bibliography:

S.P.S. (Société Pierre Sèche: Société scientifique internationale pour l'étude pluridisciplinaire de la Pierre Sèche) contact@pierreseche-international.org, website: www.pierresecheinternational.org

S.P.S. 1997: La pedra en sec. Obra, paisatge i patrimoni, IV Congrés Internacional de Construcció de Pedra en Sec, Mallorca, del 28 al 30 de setembre de 1994, Mallorca: Edita: Consell Insular de Mallorca. FODESMA-LEADER. Grup Serra de Tramuntana.

S.P.S. 2000: Pierre Sèche-Regards Croisés, Actes du VIe Congrès International sur la Pierre Sèche, Carcès, Le Val (France) – 24 au 27 septembre 1998, Textes réunis par 'Ada Acovitsioti-Hameau, Supplement No 8 au Cahier de L' Aser, Publié avec le concours du Conseil Général du Var et des Villes de Brignoles et Le Val, A.S.E.R. du Centre-Var.

S.P.S. 2004a, Arquitecturas de Pietra en Seco, Actas del VII Congreso Internacional de Arquitecturas de Piedra en Seco. Peñiscola (España), del 12 al 14 de Octubre de 2000, Edición a cargo de Vicente Meseguer Folch y Arturo Zaragozá Catalán, Benicarló: Publicaciones del Centro de Estudios del Maestrazgo.

S.P.S. 2004b, Trockenmauerbau im Berggebiet, (Drystone Walls in Alpine Regions), Internationaler Trockenmauerkogress, 29 bis 31 August 2002, Visp, Schweiz. Tagungsband, Redaktion und Layaut: Theodor Schmidt and Marianne Hassenstein, CH-3612 Steffisburg: Herausgeberin (Publisher) Stiftung Umwelt Einsatz Schweiz Sus.

S.P.S. 2010a, Savoir/Paysages/Structures. Saberes/Paisajes/ e Structuras, 10ème Congrès International sur la Pierre Sèche, Montalban (Espagne) 22-24 September 2006, A.S.E.R. du Centre-Var: Suppléments no 13 au Cahier de l' Aser.

S.P.S. 2010b, Dry Stone Walls as part of the Cultural Landscape , Proceedings of the 12th International Dry Stone Walling Congress, Held at the University of Cumbria, Ambleside Campus, 4-6 September 2010, Kendal/Cumbria: Dry Stone Walling Association of Great Britain.

S.P.S. 2018, Dry Stone Constructions and Built Heritage, Papers of the 15th International Congress on dry stone walling, Argostoli (Cephalonia – Greece), September 2016, Editors: Mania Beriatou and Ioulia Papaeftychiou, S.P.S. Société

Pierre Sèche: Société scientifique internationale pour l' étude pluridisciplinaire de la Pierre Sèche) and Cephalonia Ithaca Foundation.

S.P.S. 2020, XVI CONGRESO INTERNACIONAL & WORKSHOP SOBRE LA RIEDRA SECA, Agustín Petschen (Cordinador), Societat Històrico Arqueològica Martí i Bella, Société scientifique international pour l' étude pluridisciplinaire de la Pierre Sèche, Cercle Artístic de Ciutadella, Puplicacions des Born, 26, 2020.

17° international congress on dry stone
KONAVLE 2021

Short biographies of author:

Ioulia K. Papaeftychiou is an Architect Engineer, PhD of the NTUA and Teacher. She is actively involved in research, browsing and writing. She has presented her contributions to numerous conferences in Greece and abroad and she has published multiple articles and scientific papers on architectural and development issues. She is a member of the Society of Hellenic Mills, the Hellenic Society for the Environment and Cultural Heritage (ELLINIKI ETAIRIA), the Center of Sciences and Arts of the Dodecanese, the Center for the Carpathian Research, and the following international scientific societies: Société Scientifique Internationale pour l'étude pluridisciplinaire de la Pierre Sèche (SPS), International Council on Monuments and Sites (ICOMOS), The International Molinological Society (TIMS) and International Terraced Landscape Allience (ITLA).