Historic Garden Management

Subjects: Management | Others | Horticulture

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Historic garden management seeks to direct the evolution of complex cultural and natural heritage sites towards best meeting the needs of their owners, visitors and community. This entails balancing the conservation of these delicate socio-ecological systems with accessibility to the many environmental, economic and socio-cultural benefits that they provide. Thus, historic garden management must be operational, continual and sustainable; it involves multiple stakeholders, and most of all, must be adaptive. That is why it is especially useful to conceive of historic garden management as a cyclical process that loops through a strategic phase, an operational phase and an assessment phase. In order to understand the many facets and challenges of historic garden management, a systematic review was carried out on international academic literature addressing this topic, with special attention regarding the social, economic and environmental aspects of sustainability. Academic studies on this subject come from many different disciplines, making it both stimulating and fragmented. This review seeks to consolidate these interdisciplinary efforts into a clear vision, including a framework of key themes and research methods. An analysis of the reviewed literature shows that research has focused on describing the gardens themselves, with few studies interested in the people sustaining them. Future research should follow recent policy documents' lead and pay more attention to community value and involvement.

Historic gardens | Social sustainability | Economic sustainability | Environmental sustainability | Urban landscape | heritage management | Heritage value assessment | Conservation planning | Conservation policy | Interdisciplinary approaches

1. Introduction

Historic gardens are precious natural and cultural heritage sites that provide many socio-cultural, environmental, and economic benefits. Because they are made up of living elements, they require constant, qualified, long-term management to ensure their survival. They also have very high fixed costs and are capital intensive. For this reason, management has continued to be one of the greatest challenges to their sustainable conservation and to guaranteeing all of the many benefits that they provide.Before beginning, it bears asking: what exactly is intended by "historic garden management"? Although there is an ongoing academic discourse trying to pin down the term "management", it is generally understood as the process through which "organizations set and achieve their objectives by planning, organizing and controlling their resources"[1]. Thus, management can be understood as the carrying out of the objectives of external and internal stakeholders, in this case, the community, visitors, and owners.

These management objectives have probably changed greatly over the lifetime of any historic garden. While once used primarily for individual pleasure, they are increasingly valued by society as a whole and maintained for their external sociocultural and environmental benefits, especially in the historic urban landscape[2]. The first modern documented guidelines regarding conservation-oriented garden management were written by Antoine Dézallier d'Argenville at the beginning of the 18th century, for the great French Gardens of André Le Nôtre[3]. At the same time that these and other royal

gardens became important national symbols during the Imperial age, garden visiting developed hand-in-hand with the Grand Tour, a cultural trip around Europe taken by the upper-class as the capstone of their education[4]. The rise of garden visiting, especially in Great Britain, would change the focus of historic garden management from pleasing the estate's family to satisfying a widening public[2]. These two origins are emblematic of the two principal internal objectives guiding historic garden management today: conserving the site's cultural and natural heritage and satisfying visitor needs. Achieving both requires a great deal of interdisciplinary knowledge, especially if the two objectives are to complement and not contrast one another.

Heritage conservation management principles are defined by international guiding documents and treaties dating back to the Athens Charter of 1931[5]. These documents sometimes distinguish between two facets of conservation: that of care (maintenance and management) and that of repair (restoration and reconstruction). Other guiding documents see the two as part of a continual conservation management process. It should be noted that the use of the term "maintenance" was more commonly used in 20th-century documents when historic gardens were valued as material heritage purely for their monument value, while the use of the term "management" grew as they also became valued for their immaterial heritage and cultural significance. Indeed, historic gardens may have inspired this development in how all cultural heritage is identified and valued[5]. It should also be noted that historic gardens are not always referred to specifically by that name. According to their focus, policy documents may also address historic gardens under different labels, including "historic"[6] or "culturally significant sites"[7], "living monuments"[8] or "cultural landscapes"[9]. Furthermore, there has been an evolution away from monument-centric terms that only indicate the material fabric of heritage towards terms that include intangible aspects as well[10]. This shift has been accompanied by a growing recognition of the community's role in landscape conservation and a change in the experts' role from gatekeeper to facilitator. In addition, heritage has been recognized as not only historically and culturally important but also an essential factor in promoting sustainable development and wellbeing. Heritage conservation is a key policy point of documents such as the United Nations (UN) Sustainable Development Goals [11]—Target 11.4, "Strengthen efforts to protect and safeguard the world's cultural and natural heritage". This emphasis on sustainability can also be seen in the European Landscape Convention's definition of landscape management as "action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonize changes which are brought about by social, economic and environmental processes"[9]. Thus, we can conclude that historic garden management must be operational, continual and sustainable; it involves multiple stakeholders, and most of all, must be adaptive. In the true sense of the term practice, it is never completed and always improving. That is why it is especially useful to conceive of historic garden management as a cyclical process that loops through a strategic phase, an operational phase and an assessment phase. The strategic phase involves defining long term stakeholders, significance, responsibilities and constraints; the operational phase is carried out within a given time frame and involves short-term actions, contracts and actors directly involved in management; the assessment phase regards the continuative monitoring of goal achievement, critical issues and policy implementation[12]. This vision of a multiphase conservation management process is common throughout operational guiding documents such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List Operational Guidelines[13], the Australia/International Council on Monuments and Sites (ICOMOS) Burra Charter for Places of Cultural Significance[7], Natural England and English Heritage's Guidance Notes[14] and The United States of America (USA) Department of the Interior's Guidelines for the Management of Cultural Landscapes [15].

However, the ideal vision proposed in these policy documents often does not find its way into practice. National, regional and municipal planning measures fail to support historic gardens because they are out of date or because historic gardens fall between the more easily identifiable categories of architectural and natural heritage. Without more support, owners and

managers are hard-pressed to keep up with even the day-to-day operations of their property, and gardens can easily slide into decay. Specifically, they struggle with financial resources[16][17], human capital[18][19][20][21] and information management[22][23]. Many have undergone a change in ownership from private estate to the public park, entailing a loss of compositional legibility; relationship with internal architecture and surrounding rural or urban context; number and diversity of botanical, architectural and decorative elements; agricultural or productive areas; continuous qualified care by the same gardeners in favor of discontinuous municipal gardeners or external firms; altered or destroyed views and vistas of the surrounding landscape [12]. This all erodes the garden's identity, an intangible value strongly linked to the character, spirit of the place, and significance, at the heart of conservation theory [24].

In order to safeguard both public[12] and private[22] historic gardens, efficient management tools and strategies need to be developed and evaluated that specifically address social, economic and environmental sustainability. Academic interest in this topic began in the 1980′s, around when the Florence Charter officially identified historic gardens as living monuments[8]. The first decades of research generally focused on establishing the broader merits and principles of historic garden conservation. Around the time the European Landscape Convention was ratified in 2000, the best practice conservation guidelines mentioned above had been established. This was when the academic discourse began to assert itself and to branch out. In addition to the essays and historical case studies from Art and Architecture historians that were already being produced, contributions from many other fields began to appear. An early comprehensive review of historic garden management was published by Clare Askwith in 1999. However, in her article, "The economic contribution of historic parks, gardens and designed landscapes: a review of existing data and research recommendations for future research"[16], she must rely on a great deal of gray or flawed literature and can only address the United Kingdom (UK). Askwith concludes that information is lacking in everything from basic stocktaking, to historic gardens' impact as tourist attractions, to their role in local area economic regeneration, and finally their valuation as non-market goods.

Since Askwith's article, research has continued to branch out to new geographic areas and new disciplines. Researchers are increasingly interested in historic gardens' contributions to sustainability, and not just their material conservation. They also benefit from more historic gardens being recognized, restored and functioning, thus providing a wider selection of study subjects. Today, the literature is spread out among many diverse academic fields, including Applied Botany; Communications; Environmental Valuation and Appraisal; Heritage Studies; Horticulture; Landscape Architecture; Tourism Studies; and Urban Studies. Each applies its own particular perspectives and methods. Although rich with possibility, the resulting fragmentation impedes a clear vision of the current state of historic garden management studies and the various research tools available.

2. Methods

The body of reviewed literature was identified and analyzed through a systematic review of records indexed in Scopus and Web of Science(WoS) on October 15th, 2020, with the following search query strings: (TITLE (historic * AND garden* AND management OR econ*) OR TITLE-ABS-KEY("historic* garden*" AND management OR maintenance OR upkeep OR econ*)) in Scopus; ((historic* garden*) AND (management or econ*)) OR TOPIC:("historic* garden*") AND TOPIC: (management OR maintenance OR econ*) in Web of Science. The obligatory term "historic garden" was chosen in order to concentrate directly on research that identified itself as pertaining to historic gardens, as opposed to implicitly connected research under other related labels(i.e., cultural landscapes, designed landscapes, historic parks, etc.). The optional keywords management, maintenance and upkeep, were chosen in order to capture as wide a sample of management-related articles as possible, with keywords commonly used in relevant policy documents. The keyword econ* was added after initial trial searches failed to collect economic literature in the two chosen databases. Documents were considered in any language, and Google translator was used to aiding the reading of studies written in languages other than English, Italian or French. The initial Scopus search

yielded 57 documents, and the initial Web of Science search yielded 31 documents. Twenty-seven records were repeated in both databases, making the combined list of documents under consideration 61.The identified publications were then screened based on their title and abstract to make sure that they focused on the management issues of historic gardens. Six publications were excluded at this point because they were inaccessible (5) or off-topic (1). Those that passed the screening were then accessed and read in their entirety. At this stage, another 5 articles were excluded because they were off-topic, repeated research published in another document within the review or was a book in which separate chapters had already been counted in the review. Finally, the remaining 50 documents were included in the historic garden management literature review.

Data were collected on each publication by reading the full text and classifying it according to the following criteria: supply or demand orientation; management process phase involved; sustainability themes addressed (social, economic, or environmental); geographic characteristics of the study (scale, country, continent); number of sites investigated; kind of information gathered and communicated(empirical or theoretical); eventual policy references; research instruments; possibility of bias in the study specifically regarding historic garden research; garden use addressed, i.e., general, public, tourist, or private (Table 2). Bias is assessed according to whether definitions and principles in the reviewed study are taken from named policy documents and whether the information is empirically gathered.1 point is given for each parameter, with a possible bias score ranging between 0 and 2.

3. Discussion of Historic garden management research

In this section, the larger ramifications of the reviewed literature are discussed, and gaps are identified. Particular attention is paid to the changing conceptual foundations of policy and practice and the disconnect between the two; the community and stakeholders as protagonists of historic garden management; the social, economic and environmental sustainability of historic gardens; the emergence of previously unrepresented cultures and regions; the diversifying methodologies and interdisciplinary approaches being applied in the subject. Some studies from outside of the reviewed literature are also cited in this section as suggested examples of promising empiric methods and directions.

3.1. Changing Conceptual Frameworks in Policy and in Practice

The literature in this review dates back to the 1980s when historic gardens were first recognized as heritage. Over these past four decades, both the ideologic foundations and the methodological instruments of historic garden management have evolved and grown in scope and complexity. The policy and professional deontology guiding historic garden management has gone from preserving “living monuments”[8] in the Florence Charter to managing dynamic landscapes in the European Landscape Convention [9]. This second approach is better equipped to recognize intangible heritage values, involve the community in heritage identification and management, and prioritize sustainability. However, a significant gap still remains between the ideal vision laid out in policy documents and what is actually achieved in practice. Not unaware, the academic community has sought to better understand and improve historic garden management, with each discipline proposing its own specialized methodologies and research tools. However, research is not always based on an updated understanding of conservation thought.

When ICOMOS and IFLA jointly ratified the Florence Charter in 1982 [8], they officially added historic gardens to those heritage monuments and sites codified by the ICOMOS Venice Charter of 1964 [6]. The Florence Charter prioritized the identification and listing of historic gardens by trained experts. Thus, in the earlier years of historic garden research, the

academic community was principally concerned with these tasks, as well as the possible actions (maintenance, conservation, restoration and reconstruction) admitted by the charter. The Florence Charter continues to be the most cited policy document in the reviewed literature; however, its influence is not always positive. While the Florence Charter represents an important advancement in heritage conservation, it is limiting if not complemented by other, more recent, documents in the heritage conservation canon.

Another important evolution in heritage policy is an increasing shift away from aiming to maintain historic gardens as unchanged as possible[8] towards managing change for sustainable development [9]. The former puts the most emphasis on one-time restoration projects carried out by experts and minimally considers management and upkeep. The latter puts the most emphasis on conservation management planning, where stakeholders (including experts, owner/managers and the community) guide both extraordinary and routine works. In order to aid both expert and non-expert stakeholders, policy is increasingly accompanied by operational guidelines such as those discussed by Cazzani et al. [12], which break down the complicated conservation management process into a cyclical series of strategic, operational and assessment phases. The effective difference such a tool makes can be seen in a comparison between Burmil's[25] and Halbrook's [26] case studies. While the former is not equipped by the Florence Charter to deal with change in the garden, the latter has a set of protocols provided by the US Ministry of the Interior's Guidelines[15] to confidently navigate the same kinds of problems. Furthermore, a conservation management view allows authors to define the management phase that they are addressing, without having to definitely resolve every problem. Indeed, given the scope and complexity of historic garden management, the latter would be impossible. Instead, operational guidelines focus on decision-making tools that can help prioritize the allocation of limited resources in a defined time-frame. Afterward, progress is assessed, and the cycle begins again.

The literature unequivocally shows that the principles of international guiding documents are most often not reflected in national, regional and municipal planning policy. At best, local authorities are adopting earlier policies such as the Florence Charter and focusing their attention on measures that protect listed gardens from development. While such efforts keep gardens from disappearing, they do not help gardens thrive. While the literature describes the problem, it does not find solutions. More pragmatic policy analysis is necessary that denounces less and investigates more. Public choice theory and other political economy approaches would be useful in better understanding the hows and whys of policy success and failure.

3.2. Community Members and Stakeholders as the New Protagonists in Historic Garden Management

Like the Athens and Venice Charter, the Florence Charter was concerned with identifying and saving monuments based on expert-attributed merit and did not see the public as stewards or stakeholders. With 82% of the literature in this review dedicated to describing the gardens themselves, i.e., supply, it is clear that the academic community embraced this role. However, around the same time that the Florence Charter was written, ICOMOS, as well as other bodies such as UNESCO, began to see experts as facilitators and not gatekeepers. Instead of deciding the value of heritage by themselves, they were given the responsibility of gauging the community's value for heritage sites and helping them care for them. This development was inspired by a recognition of the significance attributed to heritage by native peoples in documents such as the 1979 Australian ICOMOS Burra Charter[7] and the 2004 US/ICOMOS Natchitoches Declaration on Heritage Landscapes [27], as well as a desire to contrast globalization and the oppression of ethnic minorities in the 1994 ICOMOS Nara document[28]. As the European Union formed and sought a collective identity, it also played a leading role in recognizing historic urban areas and cultural landscapes as heritage assets, contributing to guiding documents such as the 2012 ICOMOS Valletta Principles[24]; the 2011 UNESCO Recommendations on the Historic Urban Landscape [29]; the 2015 ICOMOS Declaration on

Heritage and Landscape as Human Values. These documents place the same primacy on community-attributed value and stewardship as those mentioned above. Legislation such as the UNESCO World Heritage Convention and the European Landscape Convention also incorporated a community-based attribution of significance, integrity and authenticity.

With policy documents universally calling for community involvement, the lack of research addressing this aspect is glaring. In this review, those studies that pay the most attention to community value and stewardship are categorized as demand [30][31][32][33]or both supply and demand[16][34][35][36] research. These studies use methodologies from the social sciences, such as survey questionnaires and interviews and economic appraisal techniques to investigate the community-attributed value of historic gardens. De Oliveira Paiva, de Brita Sousa and Carcaud [36] and Silva and Carvalho [30] give comprehensive presentations of research carried out within the field of Tourism Studies, while Askwith[16] provides various examples of economic appraisal methods. One might imagine that demand research has not been addressed much because historic garden scholars tend to come from Landscape or Cultural Heritage backgrounds. However, both Rostami et al. [31], from Engineering, Architecture and Built Environment, and Saeed et al. [33], from Agricultural Science, are both able to go outside the traditional confines of their discipline and conduct informative visitor surveys demonstrating the social and psychophysical benefits perceived by garden visitors and the wider community. The former also conduct a very thorough review of the literature evaluating the health and wellbeing benefits provided by urban nature and the social benefits provided by cultural heritage.

There are still many gaps in the literature regarding the demand-oriented study and community value of historic gardens. Monetary and non-monetary landscape appraisal methods are not being used, even though they have been developed for just this purpose[37][38]. These methods analyze demand through stated and revealed preference methods to estimate consumer surplus and quantify the positive externalities provided by non-market and public goods. Askwith's review gives a small but dated sample of these techniques. Today, they are commonly applied in the fields of Environmental, Ecological and Cultural Economics and Landscape Valuation, with many pertinent examples to be found.

Another important aspect of community value that is not addressed in the reviewed literature is equity. While there are many documented social benefits provided by historic gardens [31] that justify their support with public funding, studies have also repeatedly shown that historic garden visitors are predominantly wealthy, well-educated, older and female[30][36][39]. When confronting a similar problem in the arts, many cultural economists argue that culture is a merit good, i.e., a good that is more highly valued by society than by individual consumers because the latter are not fully able to understand its worth[40]. Both public and private expenditure on merit goods are motivated by altruism as well as a desire to improve one's own situation by improving community welfare[40]. Public resources are typically also spent on outreach to educate the public to increase their demand for those goods that increase their welfare, often focusing on the young and disadvantaged. Differentiated pricing also serves to lower the cost of merit goods to what consumer segments are willing to pay. Studies conducted on "plant blindness"[41][42] imply that education and outreach greatly impact visitors' appreciation and demand for nature experiences.

In heritage policy and practice, this outreach is called "interpretation". Some forms of interpretation common in cultural and natural heritage sites include signage, brochures, leaflets, exhibitions, visual displays, smell or touch stations, written or audio self-guided itineraries, expert-led guided walks, and interactive digital or web-based technology, among others. Counsell[23], reviews some literature and guidelines on historic garden interpretation and seeks to streamline the process from information recording to primary interpretation to secondary interpretation. However, much more could be done, especially regarding the effectiveness of interpretation in raising community attributed value or willingness to pay for historic gardens.

Internal stakeholders also merit attention as important members of the community. More than any other, the operational management phase regards the day-to-day struggles of garden owners, managers, gardeners and other staff. The lack of operational management research in the reviewed literature reveals that scholars maintain an expert-centered rather than stakeholder-centered focus. Any research truly interested in the sustainability of historic gardens must concern itself with those working to keep historic gardens afloat. As Brine and Feather[22] point out, the owners and managers of historic gardens are primarily motivated by a desire to conserve their property for future generations and share it with visitors, and not by profit. Indeed, as shown by Askwith[16], and Meda and Rinaldi[17], they are rarely able to make ends meet. Some authors hope to help historic garden staff work more efficiently with spatial information acquisition and management systems [12][13][43]. However, as Brine and Feather note, most heritage managers do not have the time or the technical skills necessary to learn to use these systems. Furthermore, they are not inclined to sit behind a computer and spend most of their workday in the field. However, smartphones may make data acquisition, compilation and retrieval increasingly accessible in the field, and a younger, more technology-savvy generation may be better equipped to use this technology. Other efforts made in the literature to improve efficiency are more immediately accessible, such as automated irrigation [44] and the use of standard management protocols[45].

Adequate staffing also emerges in the literature as a significant problem, with Boisset[19], Sales[21], Thoday [20], and Albericci[18] all asserting that a well-trained, motivated, and adequately supplied gardening staff is the essential factor in historic garden management. Given that the same authors also identify a constantly worsening trend in this department, scholars must step up to fill the gap regarding historic garden staff. Research must better understand who is caring for our historic gardens and must find ways to requalify the figure of the skilled gardener in order to attract younger generations. The role of the media and garden celebrities has also not been investigated. Could the media contribute to making the professional figure of the master gardener relevant and respected? The profession of the chef, which is similar in many ways, was also once considered menial but is now attracting increasing attention and prestige thanks to mediatic attention [46].

3.3. Sustainability of Historic Gardens

Created by the combined forces of man and nature and necessitating continual resources to survive, historic gardens represent a perfect union of the social, economic and economic pillars of sustainability. In light of this and the increasing relevance is given to sustainability by such heritage policy documents as the European Landscape Convention and the UN Sustainable Development Goals, the literature in this review is categorized according to these three aspects of sustainability processes.

The literature shows that historic garden management studies are strongly focused on social sustainability. However, much of this research only regards the social sustainability of material heritage and not the social sustainability of political systems, intangible culture, or wellbeing. Rostami et al. [31] provide a good review of the literature regarding all aspects of social sustainability; Phillip, Abdel-Rahman and Nourhan [47], and Mahdizadeh and Rajendran [65] specifically investigate the sustainability of the political institutions governing historic garden conservation; Gao and Dietze-Schirdewahn[10] address the sustainability of intangible culture in historic gardens. Future research should follow the lead of these authors and look beyond the conservation of material heritage when addressing social sustainability.

Wellbeing is an especially important topic at the moment. A host of literature exists demonstrating the contribution made to wellbeing by urban green spaces and cultural heritage. Research on urban parks and gardens has shown how they contribute to health by providing outdoor areas for play and sport, increasing the amount people walk, reducing stress, and promoting relaxation[37]. They also contribute to a healthier and more pleasant urban environment by reducing the heat island

effect, noise pollution, and atmospheric pollution[48]. Cultural heritage in cities is also increasingly recognized as a necessary component of urban life, contributing to creating a sense of place, pride and attachment and belonging, community stability, social infrastructure and capital, and security [31]. While historic gardens surely contribute both sets of benefits, research is missing regarding their special contribution to wellbeing. Historic garden researchers should not be content to only cite studies from other subjects quantifying the psychophysical health benefits of nature and culture; they must pursue these areas themselves.

The economic sustainability of historic gardens is also woefully underrepresented in the literature. While Silva and Carvalho [30] and de Oliveira Paiva, de Brito Sousa and Carcaud[36] give information and estimates on the income generated by garden tourism, only Askwith [16] and Pérez-Urrestarazu et al.[44] even mention the costs of historic gardens. While the former studies provide important information on the general historic garden market, the costs of individual tourist gardens must be known in order to understand how much income gardens need to generate in order to break even. This must then be considered along with marketing segmentation issues [49]and visitor carrying capacity [50] in order to strategize for an optimum number of visitors who will financially support gardens without irreparably damaging them. In his monograph on garden tourism, Richard Benfield discusses these considerations and also notes that historic and botanical gardens are being increasingly asked to be economically self-sufficient through visitor-induced revenue [51]. However, as both Benfield and Tempesta note, historic gardens are public and merit goods and therefore will always be undervalued by consumers [37][38][52]. According to these authors, they cannot survive without government or philanthropic sponsorship. One reason why UK historic gardens are so lauded in the literature is the relative success achieved by such economic incentive programs as the National Lottery Fund and the intervention of private nonprofit entities such as the National Trust. While UK focused research exists documenting these successes (e.g., Harney[53]), examples from other regions and nations would be illuminating. The economic effects of public command, control and incentive measures, as well as private nonprofit intervention, should be a topic for future study. As Tempesta emphasizes, it is essential that the effectiveness and efficiency of these public or philanthropic interventions be evaluated through cost–benefit analysis[38] in order to assure that public spending is truly increasing welfare.

While the literature review shows that researchers are quite interested in historic gardens' contribution to environmental sustainability, until now these investigations have mainly concentrated on gardens' role in maintaining biodiversity by providing habitat for both important native species as well as botanical cultural relicts. This connection between cultural and biological diversity and richness is certainly important, especially considering the habitat loss caused by urbanization. However, in light of the growing concern over urban resilience, growing populations and climate change, these subjects should also be specifically addressed by future historic garden studies.

Ecosystem services are an emerging research subject that seeks to combine all three sustainability pillars in an ecologically and economically founded conceptual framework. They were originally defined by the Millennium Ecosystem Assessment as "the benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fiber; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling,"[54]. While the specific nomenclature of these services is still being revised, the concept of assigning a market value to ecological functions to better inform policy and decision-making remains the same. In general, ecosystem services are assigned a total economic value (TEV), comprised of a use-value and a non-use value. Neonato, Tomaselli and Collanino's review provides an initial example of applying Ecosystem Services to historic gardens and other urban green areas[48].

3.4. New Regions and Cultures

Although historic garden management literature was concentrated in Europe in the past, where interest in environmental and cultural heritage was a reaction to the losses suffered during the World Wars[5], research is now also coming from Asia, North Africa and South America. This trend may be in response to a greater interest in wellbeing and leisure, a desire to assert a non-colonial national identity or a perceived risk of losing heritage. In any case, these non-Eurocentric studies have much to contribute. They are not only informative because they shed light on previously unexplored landscapes but also because they seem less inhibited in criticizing their national heritage policy and planning measures. European researchers should be inspired by these studies to critically evaluate the effectiveness and efficiency of their national policy and planning system and take a public-choice view of political actors.

In this review, we have also seen that significant inter-European differences remain to be explored regarding historic gardens and their management. For example, Silva and Carvalho[47] show the differences between the historic garden visitor in Portugal compared to the historic garden visitor in the United Kingdom. Nationwide tourism market studies should be conducted by researchers in order to provide more appropriate and accurate benchmarks for individual gardens. These should be conducted in line with standardized statistical methodologies and sampling scales so that useful comparisons can be made. This review focuses on mainstream scientific publications by selecting literature from the prominent interdisciplinary scientific databases Scopus and WoS. While this choice allows for a panoramic perspective of an already complicated subject, it also may have excluded more locally relevant literature. Future country-specific studies should be more inclusive and look into smaller publications in different languages as well as gray literature.

3.5. New Methods and Disciplines

One of the principal goals of this literature review is to identify the research methods and instruments that can best contribute to historic garden management study and indicate where underused methodologies would be particularly valuable. One of the most important such methodologies are those of Resource Economics and Appraisal. In the only reviewed study regarding economic methods, Askwith laments that “those concerned with the conservation of historic parks and gardens have been chary of quantifying their value, fearing perhaps that such an approach, taken in extremis might lead to knowing the price of everything and the value of nothing”[16]. This still seems to be the case. Economic appraisal methods are useful for more than just finances. They investigate community value, the allocation of scarce resources and optimization of wellbeing. Furthermore, they translate these complex considerations into pragmatic, solution-oriented terms.

Cost–benefit analysis studies are particularly useful for showing the lack of public resources invested in heritage and their often inefficient allocation, with contingent valuation studies continuing to be a preferred method for evaluating the total economic value of both natural and cultural heritage. There are various stated and revealed preference methods that evaluate value in both monetary and non-monetary terms. Historic gardens should be ideal candidates for these methodologies, especially because authors have noted that public administrations tend to undervalue and under-support them. Quantifying their value to the community is a first step in resolving this problem, especially for public gardens. A comparison of costs and benefits should also be part of any feasibility study for tourist gardens within the strategic phase of management. The investigation of performance indicators, such as those used by Pérez-Urrestarazu[44], would also contribute to a better understanding of historic garden management efficiency, even when making choices such as those suggested by Thoday[20] to maintain traditional husbandry practices. As a recent doctoral thesis[55] has shown, traditional gardening methods may sometimes be more efficient than imagined and also contribute added esthetic, ecological, and cultural value.

While methods from Tourism Studies are better represented in the literature review, some gaps in the literature include visitor surveys conducted in different geographic areas and in different kinds of gardens; stocktaking on the number of sites, their

ownership, their visitor flows, and their financial balance; studies on carrying capacity assessment; content analysis comparing visitor reviews or garden interpretation material to garden mission statements. New technology using mobile phones and tracking data may make tracking visitor flow and mobility much easier.

As for environmental research methods, biodiversity concerned field studies continue to be important tools for evaluating historic gardens' ecological value as urban habitat. These can be used to calculate and analyze various ecological indicators such as species number, diversity, richness, or number of IUCN Red List species. As mentioned above, the growing field of ecosystem service evaluation offers an interesting way to combine ecological and economic analysis. In addition to biodiversity and habitat, future studies should further investigate the impact historic gardens have on the urban environment, including climate, water-flow, air and soil quality, nutrient cycles (especially carbon), and noise. Other factors such as human health and wellbeing and resilience to climate change should also be further investigated. Research is also needed that investigates the different environmental impacts of different types of historic gardens in a wider array of geographic, climatic and sociocultural contexts. Researchers should not be content to cite the same studies as a benchmark for everything (for example American forestry data are often used to estimate ecosystem services throughout the world [48]), but must achieve more detailed and specific measurements.

Regarding the methodologies from cultural studies and architecture, historical analysis and case studies are well represented in our review. These published studies are invaluable for the owners and managers of historic gardens, who often lack the resources and expertise to dedicate to archival study and detailed site analysis. However, as noted by Brine and Feather [22], this information often does not reach those who need it most. Authors of the reviewed literature concerned with GIS information systems and computer modelling attempt to resolve this problem by creating applications that can manage information both for managers as well as for the public. However, any such research should also address garden managers lack of technological skills and need to be in the field. The contribution of smartphones and apps that use their incorporated geographic positioning system (GPS) should be investigated in this regard.

Historic gardens are located at a nexus between nature and culture, making them a particularly fascinating and rewarding laboratory for the disciplines of Museology, Heritage Interpretation, and Environmental Education. Interpretation should also be studied from an economic standpoint, as it adds significant value to the visitor experience if done well, allowing visitors to perceive a wider array of tangible and intangible benefits. Future research may include economic estimates of that perceived benefit, along with a better understanding of how to assess the quality and effectiveness of heritage interpretation in a historic garden.

Finally, it should be noted that most historic garden research has addressed tourist gardens and not public or private gardens. Efforts should be made to address all three typologies and to distinguish each one's particular characteristics and needs.

4. Conclusions

This review set out to collect the many different threads of multidisciplinary research investigating historic garden management in order to arrive at a comprehensive vision of the subject, evaluate its progress, and give indications for future development. While much progress has been made in recognizing the significance of historic gardens and their living and built fabric, much remains to be understood and done regarding their management. Historic garden researchers must leave behind the expert-driven approaches of the past and find new ways to give a voice to the community and the internal stakeholders that support historic gardens. That is not to say that experts do not have a role. They should use their

knowledge to help community members better understand and appreciate historic gardens and advocate for more effective, efficient and equitable policy measures. In this review, Social Science methods from the fields of Resource Economics and Appraisal, Tourism Studies and Urban Heritage Studies are all at the forefront of new explorations in this direction. Future research should continue to build on the general framework and themes analyzed here, focusing on more specific subjects, regions and methods.Indeed, historic gardens offer many opportunities to explore new territory and new methods from paradises that may be overlooked in our very own neighborhoods.

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