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**Environmental Sustainability for Public Libraries in Portugal: A First Approach**  
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**Abstract**

This article shares the results of the investigation on environmental sustainability practices within public libraries in Portugal for the Master Course in Library and Information Science at Lisbon University. The work intends to be a line of thought that meets the goals for *sustainable development* outlined by the United Nations and the International Federation of Libraries Association – a proposal for the inclusion of libraries and information in the post-2015 agenda. The research of green libraries around the world demonstrated a growing number that applies environmental sustainability criteria in their strategic and management action. Emerging academic research, conferences and seminars devoted to the theme proposed revision of the academic curriculum in Library Information Science. Library professional associations worldwide are creating working groups and encourage debate on environmental sustainability and the concept of "global library". To understand the Portuguese situation in this matter, questionnaires were sent to all municipal libraries in each district, resulting in a sample of 84 public libraries.

**Why environmental sustainability for libraries in Portugal?**

In 2013 Gary Strong stated:

The Library provides the capital necessary for us to understand the past and plan for the future. It is also our collective memory, as history and human experience are best preserved in writing. The Library is dedicated to the needs of its diverse communities, its advocacy and support of appropriate technology, the excellence of its collections, the commitment of its staff to its costumers, and the very highest ideals of library service. (p.27)

Currently change is inherent to the world we live whether in social, economic or political scene. The environmental issue is also a sensitive structure of mutability and in most cases. Society will have to make a greater effort in order to follow international recommendations of the scientific field, so that the issue of sustainability isn't just a simple concept and ideology. Libraries shouldn't be an exception to this effort. This Portuguese study is based on the perception on the need to discuss and reflect the applicability criteria and environmental practices to public libraries in Portugal, a theme not discussed until today.

The study intend to assess whether there are municipal libraries that apply environmental criteria in its daily management. Also, the study answered what

was the understanding of the library's professionals to the importance for beginning the creation of work groups or discussion forums on the topic and sharing ideas through foreign organizations. The concept of sustainability is currently considered as a motto for subsistence and generalized affirmation for all organizations. The environmental problematic appears in the course of new global concerns, what cannot be separated from regional and local life. New appeals to the environmental democracy and the access to information are made about the environment. Citizenship and respect for a space shared for all, requires a new social attitude.

In the final document of the United Nations *Conference on Sustainable Development* in Rio de Janeiro, 1992 – *The Future we want*, is recognized by the international community that a good governance and a sustainable economy requires the participation of the public whether in the form of *whom acts* or in the form of *whom judges the action*. Regarding public libraries and considering the goals established to serve the community and encourage the training of active and participative citizens through the creation of reading habits and access to information, we consider the need to reformulate the extent and the training of these new audiences. The Agenda 21 for culture assumes in 2015 a new important strategy: the integration of culture and the access to information as the fourth pillar for sustainability.

For this analysis it became necessary to understand the Portuguese reality and how libraries behave on this topic. Considering that their mission is to inform and educate the local community, we question if this education/information at the environmental level is actually being made and taken into account in library management day to day basis. The goal of this study is not only to raise questions and debate about the importance of these matters but also to present alternatives and solutions, to this universe of libraries which are intended to be ever more intervening and participative in society. Verify the existence of environmental policies which are being applied in management context of libraries and simultaneously, present a procedure guide applicable to the municipal public libraries.

299 municipal libraries participated in this study that were organized and contacted by Portuguese district. Municipal libraries can demonstrate its actuality and plans for the future by practicing more sustainable and environmentally friendly behaviors. Through the implementation of the Local Agenda 21 <sup>(1)</sup> the local government can also assert its position on environmental sustainability via its municipal libraries. The research of good environmental practices guides applied to libraries by consulting the *Green Guide for Public Libraries* (Finland) and the *Environmental Policy for the Academic Library Dom Carlos III* of Madrid (Spain) enabled to elaborate an environmental efficiency model applicable to Portuguese municipal libraries.

## Portuguese study structure

This study is divided into two lines of thought. A first line trying to meet the foundations of *sustainable development* and its emergency in the organizations of the XXI century and a second line aiming to highlight the possible relationship between libraries in its strand of *social and public responsibility*. The preservation of the environment through the encouragement of an active participation of their communities, strengthening ties and also encouraging public recognition.

**Chapter 2** presents methodological approach for the definition of the sample and universe, construction scheme of the questionnaire and inherent survey phases. **Chapter 3** approaches on sustainable development and the organizational vision, the emerging concepts in organizations relating the vision and commitment to civic responsibility ending with *sustainable marketing* concepts. It became relevant to understand the importance and pertinence of this issue at the present time and relate it with organizational management policies. Municipal public libraries as organizations that develop its work close to its local community and being inserted in the municipality, must be aware of the importance of these environmental sustainability policies and whether indeed these policies are inside the institution in which they operate.

**Chapter 4** describes possible relationships between *environmental sustainability* and its applicability to *information systems*, exemplifying through worldwide reality and demonstrating the IFLA role as a booster organization. Libraries scenario is changing and evolving with good practice examples. The IFLA has a discussion group for environmental sustainability and in recent years, has been focusing during world congresses on topics for sustainability and *green commitment* as a way to raise awareness. New solutions and alternatives for environmental sustainability internationally are already in development. After analyzing the foreign reality it became urgent to identify the “*state of the art*” in Portugal. **Chapter 5** reflects the role of public libraries in the country and understood this emergent “revolution” regarding the new promotion strategies in libraries. Do these movements of library professionals cover the sustainability and environmental problem? Does it undergoes a financial sustainability but doesn't focus the importance of environmental monitoring of the library itself, associated to the expenses control and collection of evidence? In fact, many libraries apply in its daily management some behaviors but without knowledge that can monitor, improve and publish the results. **Chapter 6** underlines the characterization of the universe in study and carry out the analysis of the questionnaires. **Chapter 7** presents approach for rules and procedures aiming for the construction of a guide and exemplify not only with the normalization applicable to Portugal, but also with a possible sustainable strategy for a public municipal library. ***Procedures Guide of Environmentally Sustainable for Information Systems*** was developed as final result and is

encouraging the discussion for environmental sustainability at public libraries in Portugal.

In this article we focus on internal questions such as the construction of buildings, efficiency management in energy consumption, control of water consumption, encouragement for the reduction of paper and consumables. Similarly also mention the importance of the example transmitted by the team library, or the message itself to be spread to the community. The importance of partnerships with local companies that intend to contribute for spreading environmental message and sponsor green areas inside the library.

### **Green libraries**

*Green libraries* correspond to a new movement that in the beginning covered a set of characteristics associated with the construction of the library's building itself, but quickly became simultaneously a set of attitudes and behaviors. It became a message of "education for citizenship" with the focus on knowledge and control to improve the library's functioning, explaining also that the financial life of the institution itself goes through the sustainability effort. This is a new way of management associated to space and that also begins to enable another approach to new audiences by the reformulation of the library's image, a possible marketing concept through environmental sustainability by Hauke and Werner (2013). As Hauke, Grunwald and Wilde noticed:

Efforts in "greening libraries" can be noticed all over the world from the United States or Australia, from China to Russia, from Germany to Croatia. Beside the international level with ENSULIB, the IFLA Environmental Sustainability Special Interest Group, there are few national initiatives like the US and in Australia, but many local initiatives from mostly public libraries but also national libraries starting and fostering the "Green Library Movement. ( p.1)

We verify the growing participation of North American public libraries, through the Task Force of Environment of ALA or Australian libraries with the active participation of ALIA and the incentive for LEED certification. Observe the arising of specific discussion groups of environmental themes applied to the universe of libraries in an economic context through ENSULIB by IFLA <sup>(2)</sup>. Criteria and choices are discussed not only regarding the libraries' architecture but also for encouraging new behaviors and a new visionary approach. For this arises the need to understand Portuguese library reality:

- 1) Are public libraries in Portugal applying environmental criteria in its management and internal and external message?
- 2) Do public libraries consider important to do so?
- 3) Do Portuguese libraries know what is happening worldwide?

## **Could *environmental sustainability* be a key for differentiation among libraries?**

Currently libraries find it increasingly urgent to assert and make themselves valued by the community. It is essential to point out that the information management is crucial for the development of a truly cohesive, informed and participatory society. The current premise of advocacy in librarianship field is expressed by the "*other that speaks in our behalf and defends our cause*". The message is sent out by groups, associations and partner institutions and these are those who collaborate in shaping the new image for the library. New technologies themselves enhance this "*spreading the word*". Creating strong connections inside the community, calling for mobilization for equipping the library installations or for the maintenance of the existing ones by reinforcing incentives and sharing services that could be able to be provide to other entities, are some of the examples that can be given. In fact, everyone can potentially be interested and everyone can potentially be advocates for the organization: library staff, users and friends of the library, entity administrators and managers, local companies. Environmental sustainability in libraries may actually serve to create ties with the several stakeholders and reinforce principles and ethics which are followed by the library's daily. Become a new vision for the public. The SWOT analysis allow us to evaluate the strengths, weaknesses, opportunities and threats to the organization. Knowing how to assess these parameters and how to turn them into assets of a quality policy, we can change the community view about libraries.

Applying a specific method of quality evaluation through implementing the library's intrinsic values and principles together with the promotion and publicity, could be used to help systematize of a changing process as Ochoa and Pinto stated:

Implementation of a results-based and an evidence-based management; improvement of internal and external communication; bench learning actions; the increasing relevance of the organizational values and development of codes of conduct; and the establishment of a greater transparency. (p.1)

In order to understand this need for urgent change in the way that services at the library and its community are structured, firstly it becomes necessary to see how the concept of *public library* is evolving. The knowledge access paradigm and the forms that this access can and should be taken, its creating the need in public libraries and other information systems to rethink its services that until now have been considered: their "core business". Public libraries had until today a theory based on the collections. But are ready to assume a more adapted attitude and focus on the community contributing for the "*appropriation of the library*". Establishing partnerships and working with intermediaries that can streamline processes of advocacy for the library, can't be done without an early

existence of a deep, specific and transparent relationship between the library and its stakeholders.

Lorenzo Diaz (2006) claims that being the public library an organization characterized by the public service, it ends up having to take in changes that are taking place in society and in other public or private organizations. According to the author, the investment in quality services and in the satisfaction of citizens is an integral part of the library in this XXI century. Libraries aren't just "cultural spaces" when they are in fact much more than that. They are social and humanized spaces where most of the time it is possible to be in touch with a significant part of the human fragility whether it is in unemployment situations, economic deprivation situations or cases where exists a need for reintegration. Therefore it becomes relevant to think about how is it possible to bring in the topic of environmental sustainability through a charter of principles in the library's management and within a line of action with its marketing strategy. This new vision of the library that takes on its global responsibility, that is urbanized and that reacts on behalf of its community illustrating citizenship in its actions, is essential for building its new identity. A local council cannot take on the environmental dimension when its public services do not meet the basic requirements regarding this issue. A municipal public library cannot take on its social responsibility and invest in information literacy and citizen training on environmental sustainability, without following the example that they try to pass on to society. Environmental literacy together with good sustainability practices turns libraries into consistent places with its own ideology and principles, at the same time that it reinforces the investment in its maintenance.

### **The Portuguese survey: methodological approach**

We could not empirically design a questionnaire based only on criteria that would just seem valid to us. Apart from this question it was necessary to find examples abroad of other data collection methods already being applied regarding sustainable development aimed at libraries. The construction of the questionnaire was therefore based on a study of Elina Karioja <sup>(3)</sup>, and done the respective adaptation of questions for Portuguese reality whether in terms of relevance or in terms of effectiveness and probability of response. The questions are closed and include direct answer options. The last question was an open-ended question asked for the opinion of the respondent regarding the importance of the subject, for a more qualitative assessment. The structure of the questionnaire follows five essential parts with the goal for understanding the subject of environmental sustainability applied to libraries in several dimensions:

**1<sup>st</sup> Environmental Policies**

**2<sup>nd</sup> Financial Management**

**3<sup>rd</sup> Consumption Management**

#### 4<sup>th</sup> Transmitting the message

#### 5<sup>th</sup> Acknowledgement of the importance of the subject

The questionnaire was built in an online platform and the URL was sent via e-mail.

- a) **Environmental management applied to library management** - assess whether the institution already has an environmental policy applied to the management of daily tasks, if it has a work team and if there is environmental monitoring data of the library's equipment.
- b) **Financial management applied to environmental management** - assess if in the course of the library's acquisition processes, are being considered environmental sustainability criteria or if funds for environmental improvements in the library space have already been assigned.
- c) **Effective reduction of the Library's environmental impact** – assess if the library acknowledges the importance of the impact of its ecological footprint and takes into consideration measures to reduce the environmental impact caused by the equipment.
- d) **External promotion of environmental topics** - if the library organizes events and shares topics about the environment with other libraries, thus participating in an active way by spreading the environmental message to their peers and the local community.
- e) **Acknowledgement and promotion of the importance of environmental management applied to the Library** - confirm if managers of public libraries in Portugal are acquainted with the concept of "*green library*" and whether they acknowledge its importance as a way to "revolutionize" management and the message that public libraries can spread throughout the world.

The survey structure had a total of 31 closed-ended questions and one open-ended question at the end for the importance of the discussion about environmental sustainability in libraries:

#### Environmental Management applied to the Management of the Library

1. Identification
2. Type
3. Was the Library built from scratch?
4. If the previous answer was positive, had the building construction project taken into account environmental sustainability criteria?
5. Has the public entity in which the library is inserted an Environmental Policy?
6. Has the Library an Environmental Management Policy already established?
7. Were environmental monitoring studies ever made at the library?
8. If the previous answer was positive, did those studies have practical results in the library's management?

9. Is there any work team whose aim is to implement environmental sustainability measures?

#### Financial management applied to environmental management

1. In the course of acquisition processes, are Environmental Sustainability criteria considered?
2. In the course of financial planning processes, was it ever considered funding for environmental prevention improvements at the Library?

#### Effective reduction of the Library's environmental impact

1. Does the Library have specific places where waste can be separated properly - recycling bins?
2. Are the printer consumables properly sent for recycling by a waste operator?
3. Are measurements of energy efficiency in the Library made and are data obtained from it compared?
4. Does the Library have a strategy to reduce energy consumption?
5. Do the Library's toilets have timed flow taps?
6. Does the Library have a strategy to reduce paper consumption?
7. Are digital reading and digital information transfer being encouraged?

#### External promotion of environmental topics

1. Does the Library organize events or other types of meetings that promote the discussion of environmental issues?
2. Does the Library organize book exhibits or themed exhibits about the Environment?
3. Does the Library cooperate with other institutions of an environmental nature?
4. Have the Library already contact with other libraries concerning this subject?
5. Does the Library offer a structured public transportation network to facilitate the access of the public?
6. Are there cycling infrastructures that provide access to the Library?

#### Acknowledge and promotion of the importance of environmental management applied to the Library

1. Are you acquainted with the concept of "Green Library"?
2. Are you aware of examples of "Green Libraries" currently existing in the World?
3. Do you acknowledge the importance of proper environmental management for emerging Libraries in the 21<sup>st</sup> Century?
4. Do you acknowledge the relation between the concepts of "Marketing" and "Environmental Sustainability" applied to Libraries?
5. Does the Library promote internal awareness for environmentally sustainable practices for the staff?
6. Would you say that the Library's staff is properly sensitized to environmental issues?

7. Do you find the discussion and the implementation of environmentally sustainable measures in Public Libraries in Portugal important?
8. Why?

The analysis of the questionnaires were based on an objective approach to the data and crossing them *as posteriori*, allowed us to identify critical issues regarding measures that were not being applied by libraries in Portugal. Allowed also to establish frameworks and comparative graphics, to demonstrate that is possible to develop an array of achievable procedures adaptable to each organizational reality in the librarianship and informational systems context. All libraries who responded to the questionnaire were identified by library name and location/region to which they belong. The library type was also mentioned, as well as the issue concerning the construction of the building and if this stage involved or not any environmental sustainability criteria in the options considered for the construction.

When we asked libraries if they are aware of the existence of an environmental policy in their supervising institution, we were trying to check the degree of knowledge that professionals show both about the subject and about the public body itself. The financial issue and the decisions that are being taken concerning acquisition processes of the library's furniture or of a documental nature can also be of the utmost importance. Environmental sustainability criteria can and should be included in the choices of the librarian, in order to value even investment priorities and the necessity of the acquisition itself. The investment could also be made on another level: there might be options to invest in the creation of environmental conditions in space and building themselves, meeting this urgent sustainability. The financial application can be directed for the acquisition of appliances based on renewable energy, purchase of automatic taps to an effective control of water losses, placing low energy consumption light bulbs, reformulation of the ventilating systems and air conditioning, among other measures.

### **Are libraries aware of the impact of their ecological footprint in their region?**

The environmental impact can be monitored in several aspects. The algorithm created by the interaction between these same aspects will report if that library is aware and if it intervenes or not, in an environmental sustainability policy of their local community. Aspects such as: waste separation, control of printer consumables, monitoring energy data continuously to formalize reduction strategies, control of paper consumption and also a proper water consumption management. This questionnaire also aimed to assess if the message was being passed both internally to staff and outside. Accordingly, it became important to question if libraries promote events where these issues are discussed, if it is encouraged specific training on how to be environmentally sustainable inside the facilities and if somehow, there is some collaboration with other environmental organizations. Libraries can use all stakeholders to be their

partners in the pursuit of environmental sustainability. This way of marketing will result both for the library and for the partner company.

Finally, for each librarian who is familiar with this issue of sustainable development and with the role of "green libraries" in the world and that shows a concern about this topic: will surely match a library that applies principles of sustainability and implements measures such as those that have been previously focused.

## **Public Libraries in Portugal and the Environmental Sustainability: Results**

Libraries who have responded to our questionnaire were confronted with a number of parameters applied to the context of the library sustainable practices in Portugal:

**Environmental management applied to the management of the library** – in order to draw conclusions about sustainable management and actions of public libraries;

**Financial management applied to environmental management** – acquisition process without the implementation of sustainability and containment criteria applied to public purchases can't be a standard practice;

**Effective reduction of the Library's environmental impact** – actually the reality has shown that there are libraries that are going in the right direction towards sustainability (by reducing the amount of paper that is used, by recycling printers' ink cartridges and by placing recycling bins to separate waste);

**External promotion of environmental topics** – the events and exhibitions could be very comprehensive and libraries are developing distinctive ways to reach different audiences, sustainability and the investment in sustainable development is another line of action to implement;

**Acknowledge and promotion of the importance of environmental management applied to the Library** – public libraries acknowledge the importance of this subject and establish a connection between sustainability management, marketing/image of the organization and creating values that promote and monitor development and sustainability.

63% of responding libraries claimed to know about the existence of an environmental policy established in their municipal area. In some way, they show that libraries are aware of this issue in the municipal environment.

71% of the libraries, claim that they have never made any environmental measurement (energy or water, for example) and 81% claimed that environmental monitoring in libraries is "not applicable". Other results showed that practically almost of the responding libraries (94%) consider environmental management in this context to be an important issue and claim to acknowledge the interaction between the message, the library and its environmental behavior (71%). It is important to note that 97% of the respondents consider the discussion of environmental sustainability measures to be applied to Portuguese libraries, something of the most relevancy.

To have an environmental management policy or a charter of environmental principles and values implies a set of prerogatives for the library that should be structured, worked on and evaluated over time. It is easy to claim to have an environmental policy in our library, but when faced with the fact that their staff is not yet aware of the project or that the regulating entity disregard the new line of management and that there's no external recognition, it is more likely that there isn't really an environmental policy working. In fact 81% of the responding public libraries claimed that they didn't had an environmental policy. It would be important that all libraries became aware that it isn't that difficult to start! 58% of the responding libraries had no access to any investment in terms of environmental sustainability. It may be relevant to show municipal governing bodies, that libraries are places which are open to the public several hours a day and several days a week. For that should be considered public facilities at a first line of investment. Likewise, attempts to reach agreements or protocols with local suppliers of equipment that can somehow reduce energy consumption or water consumption are possible.

Regarding the strategies to be defined in terms of sustainability, 77% of the responding libraries encourage waste separation and 90% encourage the recycling of toners and ink cartridges, but the biggest gap is at the implementation of measures to *reduce energy and water consumption*. Almost 80% of the responding universe claimed that they did not have any contact with other libraries in this regard. Around 60% of the libraries claimed that they didn't have any contact with the concept of *green library* or with other libraries that incorporate environmental practices in their daily management. We hope that this article may contribute to increase the curiosity and awareness of the possibility in adopting greener habits and sharing the concept of *global citizenship*. 71% of the responding libraries mentioned that they recognize the possible relation between the concept of "marketing" and "environmental sustainability applied to libraries". So it remains the question: why isn't there a work team in each library that gradually works on these requirements in sustainability? In fact, 70% of the public libraries answered that they still don't have a work team or a technician in charge of developing sustainable alternatives for the library.

Portuguese Librarians, Archivists and Documentarists Association plays a crucial role for the discussion of environmental sustainability in information systems. This task would take a central position in exchanging ideas, methods and work alternatives and that would put the Portuguese libraries and archives in a desirable path to sustainable development. Libraries have been walking towards sustainability for a long time now. For that we have seen the loan service of publications and the emerging of digital libraries. Either one of these cases promotes sharing of reading and knowledge exchange in a sustainable manner.

## Conclusions

The proposal to link *sustainability* and *information sciences* in Portugal leads to the reformulation for this new vision that is intended for professionals of the area. Necessarily have to consist by training our future managers and creators of libraries, through the development of future conceptual models which enables us to further develop and continuously evaluate sustainable information systems. Good practices in the library world are the essence to an effective management. The implementation of guidelines and standards that structure the consistency of the organization's functionality are extremely important. To observe the standardization regarding environmental sustainability and the proper implementation of sustainable practices together with the promotion of the services and with the image that we intend to disseminate, it's the starting point for all libraries on the pursuit of the role of the "*global library*" as been defended by Shopfel (2015).

If initially the concepts of *sustainability* and *sustainable development* might seem out of the context of library's practices and they were perhaps a subject to be worked on by other areas such as environmental and civil engineering, architecture regarding the building, after understanding their meaning and their relevance for the present we must now fully understand the possible extension of their application. It became clear that today's society revolves around these concepts. Organizations and companies look at the sustainability methodology in a way to demonstrate their environmental and social concerns, transmitting transparent principles and an ethical appreciation of the organizational vision. The customers or users will always whom will judge, when purchasing a product or service.

Environmental responsibility also lies within libraries and will increasingly become more necessary to meet communities, not only in its cultural dimension but also for their own vision of continuity.

## Notes

1. The Local Agenda 21 at a municipal level consists in creating mechanisms that allow a local sustainability system planning and developing an action plan. Strategic vision for the region by identifying a local sustainability policy that encourages especially public participation.
2. IFLA – International Federation of Libraries Association, has approved the *Statement on Libraries and Sustainable Development*, after the meeting on August 24<sup>th</sup> 2002 in Glasgow – Scotland. In 2014 The *Lyon Declaration – On access information and development*, encourages libraries to adopt environmentally sustainable measurements and policies.
3. Elina Karioja presented in 2013 a comparative study at the University of Oulu of Applied Sciences, Library and Information Services Programme (Finland), entitled Sustainability on libraries: a comparative study of ecological sustainability in IFLA WLIC 2012. The study aimed to understand which differences existed between the Finnish public libraries, as regards the

areas of environmental management and environmental awareness and foreign libraries. The questionnaire was given to the respondents at the IFLA Congress in Helsinki in August 2012.

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