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Green Human Resource Management: Practices, Benefits, and Constraints—Evidence from the Portuguese Context

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Abstract: In recent decades, the issue of environmental sustainability has become increasingly important worldwide and there is growing pressure from stakeholders for companies to transform themselves in order to mitigate their environmental impacts. Green Human Resource Management (GHRM) plays an important role in promoting a corporate culture of environmental responsibility, ensuring the effectiveness of companies' environmental strategy through its direct role with employees. In response to the lack of studies on GHRM and its implementation in the Portuguese business context, this study aims to map the GHRM practices implemented by companies operating in Portugal and to identify the perceived benefits, constraints, and challenges in implementing these practices. A total of 15 semi-structured interviews with human resource managers and environment-related management professionals of companies selected from an Environmental Management Systems—ISO 14001 database were conducted. The results show that organizations in Portugal implement environmental practices that fall within the scope of GHRM. The practices identified also range across transversal categories such as digital, mobility, products and waste management, infrastructure, performance, production, and corporate events. However, a holistic approach is needed and GHRM should be built under a multidimensional and well-planned system. This study argues that perceived benefits are constrained by the specific characteristics of the Portuguese business context which results in obstacles for the implementation and success of GHRM practices. The implications of the results for the organizations are discussed and suggestions are put forward.

Keywords: environmental sustainability; Green Human Resource Management (GHRM); practices

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Citation: Coelho, J.P.; Couto, A.I.; Ferreira-Oliveira, A.T. Green Human Resource Management: Practices, Benefits, and Constraints—Evidence from the Portuguese Context. *Sustainability* **2024**, *16*, 5478. https://doi.org/10.3390/su16135478

Academic Editors: Giedrė Lapinskienė, Dainora Gedvilaitė, Tadas Gudaitis and Grigorios L. Kyriakopoulos

Received: 18 April 2024
Revised: 3 June 2024
Accepted: 17 June 2024
Published: 27 June 2024

Correction Statement: This article has been republished with a minor change. The change does not affect the scientific content of the article and further details are available within the backmatter of the website version of this article.

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1. Introduction

In recent decades, environmental concerns have gained increasing importance on a global scale, and it is no overstatement to say that it is one of the key issues of our time, emphasized by the significant increase in natural disasters associated with climate change that are being felt across the globe. The issue of environmental sustainability emerged with the United Nations Conference on the Human Environment (or Stockholm Conference), which took place in 1972 and was defined as the start of an international political debate on environmental issues [1]. The concept of sustainable development itself first appeared at the World Commission on Environment and Development (also known as the Brundtland Commission) in the 1980s, in which development was defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs [2].

Since the emergence of the concept, there has been an exponential increase in pressure for action in favor of environmental sustainability on critical political and private decision-makers, and it is considered one of the central focuses of decision-making by managers in the 21st century [3].

This study focuses on the environmental responsibility of companies and the predominant role that Human Resource Management can play in achieving the green objectives that companies set themselves [4]. Stakeholders are increasingly paying attention to companies' environmental performance, which means companies must reinvent themselves to achieve their environmental goals [5]. If we consider the Sustainable Human Resource Management concept, Ehnert et al. define it as "the implementation of HRM strategies and practices that enable the achievement of financial, social and ecological objectives, with an impact inside and outside the organization" [6] (p. 90). This view suggests that there is more significant potential in people management policies than in purely financial objectives and results can go beyond a strategy based on numbers. Consequently, how organizations are dealing with the issue plays a prominent role in effective environmental management that results from a Green Human Resource Management strategy [7,8]. This approach, which brings the topic of environmental sustainability to Human Resource Management, is fundamental since HRM can influence the organization's relationship with its external environment, namely with society and the environment [9]. Green Human Resource Management, on which this investigation focuses, uses Human Resource Management procedures to encourage using assets within organizations to promote environmental sustainability [10]. In effect, GHRM allows companies to achieve tangible benefits beyond improving the image and strengthening the brand among stakeholders by enhancing the creation of new products and implementing new processes and policies that generate more productivity and ensure organization compliance [11]. In this context, human resource managers assume a significant role, as they are responsible for raising workers' awareness of the green movement, promoting the sensible use of resources, and helping organizations take a responsible environmental stance towards future generations [12]. In response to the lack of studies on GHRM applied in the Portuguese business context, the object of study is, firstly, to identify Green Human Resource Management practices applied in companies operating in Portugal. At the same time, we intend to identify the benefits these companies associate with GHRM, as well as the constraints and challenges they identify in implementing green practices, through the perspective of Human Resource Management professionals and those responsible for the companies' environmental sustainability.

The main aims of the current study are to (i) identify Green Human Resource Management practices in companies operating in Portugal that have environmental management system certification, specifically the ISO 14001 standard; (ii) identify transversal environmental sustainability practices in companies in Portugal with the ISO 14001 standard; (iii) identify benefits, constraints, and challenges companies associated with GHRM from the perspective of their Human Resource Management professionals and those responsible for environmental sustainability.

To respond to these objectives, the present study was based on a literature review performed to identify environmental sustainability practices and whether GHRM, more specifically, is being implemented at a global level to understand the Portuguese national reality better. After this literature review, a qualitative analysis was conducted on 15 Portuguese companies using the interview technique, followed by data analysis that allowed us to draw relevant conclusions. It was decided to focus on national companies certified with the ISO 14001 standard. The option for this inclusion criterion was understood as a factor that guarantees concern and application of environmental measures by organizations, constituting a solid basis for implementing GHRM [13].

To pursue these objectives, we adopted the perspective of Renwick et al. [14] who, based on the AMO theory of Appelbaum et al. [15], propose the analysis of GHRM based on five fundamental areas of HRM: (i) green recruitment and selection, (ii) green training and development, (iii) green performance management, (iv) green remuneration and benefits, and (v) green involvement and empowerment, which we will call green organizational culture, justifying this redefinition later.

The relevance of this research is significant considering the relative scarcity of studies in this specific area—GHRM—and in the Portuguese context. Additionally, there is no

knowledge of the existence of Portuguese studies that identify the direct or indirect impact of GHRM at the levels of the worker, company, and society, so we intend to explore experts' perspectives on the benefits that GHRM brings at the three levels mentioned, as well as the associated constraints and challenges.

The concept of Green Human Resource Management is still relatively new in research despite the considerable increase in studies in the last decade, which means that the impact of GHRM in the work context requires more in-depth empirical work and studies [16]. Therefore, it is possible to affirm that the object of study, in addition to its evident environmental relevance, has scientific, social, and economic significance. At a scientific level, it can be considered relevant, as it adds relevant information and enriches the empirical analysis in this area. At a social level, it is relevant in that there is great interest from interested parties, particularly society in general, in environmental sustainability, with the association with green practices being important for the organizations and individuals that make them up. Finally, at an economic level, this research is essential because consumers are increasingly paying attention to environmentally friendly practices.

1.1. Literature Review

1.1.1. Concept of Green Human Resource Management (GHRM)

The emergence of the concept of Green Human Resource Management has been associated by several authors, with Wehrmeyer [17] and his work "*Greening People: Human Resources and Environmental Management*" [18–22] bringing environmental management and Human Resource Management together for the first time.

This close relationship between the concept of GA and HRM was adopted by the scientific community in the following decades [14,19,23,24], reinforcing the importance of GHRM, since it is argued that HRM improves the environmental performance associated with GA [8,25,26].

In the literature, some distinct views also incorporate the social scope in understanding GHRM [27–29]. However, for the present research, understanding GHRM with a focus on the environmental dimension was assumed to be privileged. In other words, although the literature has been analyzed simultaneously in both fields [30], in this study, we will outline the analytical perspective that assumes the concept of GHRM relates only to aspects of environmental management and Human Resource Management. We therefore consider it essential to distinguish the two concepts—Sustainable HRM and GHRM—analyzing Sustainable Human Resource Management as an HRM specialty and a framework that guides the concept of GHRM [30]. Sustainable HRM is defined as "the management of human resources [that seeks] to satisfy the ideal needs of the company and community of the present without compromising the ability to meet the needs of the future" [31] (p. 910). In our understanding, this concept is a broader concept of "sustainability", formally used in the Brundtland Commission in 1983 [2]. Sustainable HRM refers to the Triple Bottom Line [32]—People, Planet, and Profit, based on social, environmental, and economic performance, respectively.

In turn, GHRM is "a type of Sustainable HRM that focuses on environmental problems" [33] (p. 76) and that seeks to achieve the objectives of environmental performance, waste reduction, and competitive advantage, assuming a process of constant improvement and innovation, and total integration between green objectives and strategies and organizational objectives and strategies [14].

1.1.2. GHRM Areas

The role of GHRM in environmental management and the green commitment of organizations involves careful planning and internal processes aligned with the organizational strategy [14]. To this end, it is important to consider the areas of Human Resource Management with relevant impact on environmental management. Although most HR functions may have an inherent green component, contributing to the organization's sustainability [34], this study focuses on five major areas of HRM, following the organization

of other authors, such as the work of Renwick et al. [14] who propose the analysis of GHRM based on five fundamental areas of HRM: (i) green recruitment and selection, (ii) green training and development, (iii) green performance management, (iv) green compensation and benefits, and (v) green involvement and empowerment, which we will refer to as green organizational culture.

Table 1 was prepared to identify the HR functions that integrate these major areas and a descriptive synopsis to better understand the adopted areas and what they refer to in this study.

Table 1. Organization of HR functions by GHRM areas.

Classification of Adopted Areas	Author(s)	What Comprises This Area	Function Classification	Author(s)
Green recruitment and selection	Renwick et al. [1]	Job description with environmental dimensions Job advertisements with the company's environmental values Selection of candidates with a pro-environmental stance and with environmental knowledge to correctly conduct the functions	job design	Arulrajah et al. [7]
			job analysis	Arulrajah et al. [7]
			job description and analysis	C. Jabbour et al. [25]
			human resource planning	Arulrajah et al., C. Jabbour et al. [7,25]
			recruitment	Arulrajah et al., C. Jabbour et al. [7,25]
			selection	Arulrajah et al., C. Jabbour et al. [7,25]
Green training and development	Renwick et al. [1]	Environmental training programs and good practices	training and development	Arulrajah et al., C. Jabbour et al. [7,25]
Green performance management	Renwick et al. [1]	Integration of green criteria in evaluations of workers' professional performance Implement rules of conduct related to ecology and hold workers and managers accountable	performance evaluation	Arulrajah et al. [7]
			discipline management	Arulrajah et al. [7]
			performance management	Tang et al. [35]
			performance appraisal	C. Jabbour et al. [25]
Green compensation and benefits	Renwick et al. [1]	Monetary and non-monetary incentives for workers who have achieved environmental goals	reward management	Arulrajah et al. [7]
			rewarding and compensation	C. Jabbour et al. [25]
Green organizational culture	adapted from Renwick et al. *involvement and empowerment* [1]	Sharing green values between organizations and workers Formal and informal internal communication related to the environment Create green working environments Promote opportunities for worker participation in the environmental strategy, identifying the union and relationship between managers and workers as a key element	socialization	Shahriari and Hassanpoor [22]
			health and safety management	Arulrajah et al. [7]
			participation and working relationships	Ahmad and Nisar [36]
			employee relations	Arulrajah et al. [7]

Green Recruitment and Selection

We can understand green recruitment and selection as attracting talent sensitive to environmental causes generated through paperless practices [37]. This area comprises

three fundamental aspects [35,38]: (i) green worker awareness, (ii) employer branding, and (iii) green selection criteria.

The green consciousness of the workers concerns the personality of the candidates and their pro-environment consciousness, which internally enhances the voluntary behaviors of organizational citizenship for the environment at the individual level, which are not recognized by the formal reward system and contribute to a more sustainable organization [39].

Green employer branding, comprehended as a company's image and environmental reputation, is increasingly a differentiating factor in attracting talents sensitive to environmental causes. These are increasingly attentive and evaluate the environmental performance of companies, giving preference to those that present themselves with a positive environmental impact, being consonant with the values of the candidate and those of the company [40].

Finally, concerning green selection criteria, some authors argue that companies should recruit candidates who are familiar with or have environmental skills [7,41], emphasizing environmental aspects in job descriptions and candidate requirements or dedicating some questions on the environmental topic in the interview phase, shortening the lists of candidates selected based on these criteria [42]. Several authors have identified some green recruitment and selection practices, which we identify in Table 2:

Table 2. Green recruitment and selection practices.

Green Recruitment and Selection Practices	Author(s)
Online job description	Deshwal [43]
Inclusion of the company's environmental values in job advertisements	Arulrajah et al., Bombiak and Marciniuk-Kluska [7,34]
Reception of online CVs through platforms	Deshwal [43]
Use of internal job portals that allow access to job application documentation (offer letter, certifications, references)	Deshwal [43]
Verification of environmental knowledge and skills of candidates in the recruitment process	Bombiak and Marciniuk-Kluska [34]
Integration of the environmental dimension into the job description of each position, namely the inclusion of ecological skills as transversal skills for all jobs (tasks and responsibilities)	Mehta and Mehta [4]
Creation of new jobs that dedicate themselves to the organization's environmental management	Mehta and Mehta [4]

Green Training and Development

Green training and development is the set of activities that allow for learning environmental skills and raising workers' awareness of this cause [38], promoting a reduction in waste consumption, the use of adequate resources, and energy conservation, and reducing the causes of environmental degradation [44]. This area of GHRM must be understood considering three fundamental aspects, according to Tang [35]: (i) improving green awareness, (ii) green knowledge management, and (iii) development of a green climate. Thus, in addition to promoting awareness of the problem among workers, allowing, e.g., knowledge about the environmental impact that the organization generates in its activity [45], it enables them to achieve environmental management goals [46] and build a green climate that involves workers in these initiatives.

The literature suggests that this practice should be applied extensively, meaning it should reach all workers, not just those with connections to environmental management departments [38,47]. This broader scope is often considered crucial for the success of the results [48,49], as it promotes the involvement and motivation of workers in solving environmental problems [44].

In the conducted research, we identified practices of green training and development, which we present in Table 3:

Table 3. Green training and development practices.

Green Training and Development Practices	Author(s)
Implementation of environmental management programs to train workers and develop required skills	Arulrajah et al. [7]
Analysis and individual identification of workers' ecological training needs	Arulrajah et al. [7]
Distribution of surveys to workers to determine their level of literacy on the topic	Milliman and Clair [50]
Holding seminars and workshops to create environmental awareness among workers	Renwick et al. [21]
Creation of a job rotation system to train environmental issues in practice	Renwick et al. [14]
Promotion of environmental education among managers and their teams to encourage a change in attitudes and behaviors	Arulrajah et al. [7]
Organization of competitiveness programs that instill environmental values among workers, involving their families	Saifulina et al. [9]

Green Performance Management

Green performance management systems are a continuous process in the organization that will allow individual performance to be periodically evaluated to guarantee the achievement of the company's strategic objectives [11]. It is crucial that these systems are aligned with the company's environmental strategy [36] and that there is a connection between the performance evaluation criteria and the individual tasks and objectives described in the roles that each worker occupies [51,52]. Organizations have different structures and resources, so measuring green performance through standardized measures is ineffective [53]. It is, therefore, important to identify a systematic method of implementation through key performance indicators (KPIs) that include green goals [52], considering different types of organizations [38]. Clarity in performance assessment indicators is key [38], and their criteria must include factors of influence of managers within their teams, namely in the way they create awareness and involvement in environmental issues [36]. Managers must, therefore, be encouraged to incorporate environmental objectives into the functions of their teams, making them responsible for monitoring results and environmental reports [54]. It is necessary to include issues such as environmental incidents, environmental responsibilities, and carbon emissions, as well as effective communication of environmental policies and concerns [14,35,36].

Regarding the assessment of green performance, certain practices can be applied, such as those listed in Table 4:

Table 4. Green performance management practices.

Green Performance Management Practices	Author(s)
Development of a disciplinary system that promotes the adoption of environmental conduct	Bombiak and Marciniuk-Kluska [34]
Preparation of annual surveys measuring the impact of GHRM practices	Mamatha and Bharmappa [55]
Providing regular feedback to workers on their progress in achieving environmental objectives	Bangwal and Tiwari [56]
Development of positive reinforcement of environmental management (positive feedback)	Bangwal and Tiwari [56]
Development of negative reinforcement of environmental management (criticisms, warnings, and suspensions for failures)	Bangwal and Tiwari [56]
Penalty for non-compliance with environmental management goals	Bombiak and Marciniuk-Kluska, Renwick et al. [21,34]
Inclusion of a topic on environmental skills and know-how in the feedback interview	Opatha [57]
Assessment of the environmental performance of all workers	Renwick et al. [14]

Green Compensation and Benefits

According to Forman and Jorgensen [58], if aligned with the environmental strategy, the remuneration and benefits system promotes more significant commitment and a spirit of pro-environmental initiative on the part of workers and should, therefore, be encouraged. This system must include monetary and non-monetary benefits [59] to increase the effectiveness of motivating workers [14,38,60]. Several authors identify green compensation and benefits practices in their studies. Some examples are given in Table 5:

Table 5. Green compensation and benefits practices.

Green Compensation and Benefits Practices	Author(s)
Monetary:	
Using monetary-based environmental benefits (bonuses, cash, and prizes, such as credit cards to spend on green products)	Renwick et al., Bangwal and Tiwari [14,56]
Non-Monetary:	
Personalized offers to reward the achievement of ecological skills (e.g., a free day per quarter for the department that uses less paper)	Bombiak and Marciniuk-Kluska, Gómez et al. [34,61]
Offer of company promotional gifts aligned with the green culture campaign (e.g., lunch boxes, cups)	Gómez et al. [61]
Use of cash benefits environmental management on a non-monetary basis (special leaves, sabbaticals, gifts)	Renwick et al., Likhitkar and Verma [14,59]
Development of family promotion activities	Gómez et al. [61]
Use of environmental management benefits based on recognition (awards, advertising, external positions, regular praise, annual dinners with benefits for behavior most exemplary in this field, diplomas of merit)	Renwick et al. [14]
Benefits for creativity and active participation in green initiatives (career promotions, grants for environmental projects, environmental competitions)	Bombiak and Marciniuk-Kluska, Ari et al. [34,62]
Incentives for the use of bicycles as a means of transport (rented by the company) or use of more ecological (less polluting) vehicles	Saeed et al. [38]

Green Organizational Culture

The fifth and final area of GHRM intervention highlighted in this study is green organizational culture. Some authors, such as Renwick et al. [14], suggest the involvement and empowerment of workers as vital for a successful implementation of GHRM that will promote positive results for the organizations' environmental objectives. The involvement of workers in the environmental strategy must be promoted across everyone and not just to managers and intermediate positions. The empowerment of workers on these topics generates a desire for active participation in the company's environmental sustainability actions. In the specific case of this study, we converged the concepts of these authors—involvement and empowerment—designating this fifth dimension of green organizational culture. Understanding organizational culture as "a complex set of values, beliefs, assumptions, and symbols that define the way a company manages its business" [63] (p. 657), we believe this is the best definition of what this fifth dimension comprises in GHRM.

Tang et al. [35], aligned with the vision of Renwick et al. [14], advocate for an integrated approach to worker involvement that reinforces the designation adopted for this study. This approach involves five factors, namely (i) the green vision (values and symbols that support the environmental strategy); (ii) the green learning climate (corporate environment with a green conscience in which workers are concerned with good performance at the individual and group level); (iii) communication channels (formal or informal, which guarantee learning and green behaviors); (iv) green practices (pro-environment initiatives such as involving workers in working groups); and (v) encouragement of green participation (opportunities created for workers can actively participate in solving problems that promote common involvement, motivation, and environmental awareness). In this integrated approach, the organization's and individuals' values must be congruent since

workers are more concordant to demonstrate green behavior in the organization [46,64]. Likewise, the organization must provide a comfortable learning context where workers can improve their green behaviors and awareness. The environmental concern and clear communication demonstrating evidence of the organization's green values and environmental ethical commitments [46] are increasingly important for all stakeholders [65]. Likewise, the organization must provide a comfortable learning context where workers can improve their green behaviors and awareness. Finally, opportunities for active participation by workers are an effective way of motivating them to get involved in environmental management. Studies indicate that "an organizational culture that supports environmental management encourages employees to make suggestions and to engage in activities that improve the environment" [14] (p. 7). When workers have opportunities to participate, they demonstrate a greater willingness to prevent pollution and identify environmental opportunities [35,66]. Furthermore, it is important to recognize the importance of workers' tacit knowledge, which can benefit the company's environmental goals, since "workers have knowledge and skills that managers do not have" [67] (p. 1779). Some practices identified in the literature that fit into green organizational culture are listed- in Table 6:

Table 6. Green organizational culture practices.

Green Organizational Culture Practices	Author(s)
Use the knowledge of workers to improve the environmental performance of the company	Siyambalapitiya et al. [68]
Motivate workers to be green consumers outside organizations through pro-environment labor relations. Examples: encourage recycling at home; buy recycled products; give preference to public transport	Saifulina et al., Jackson et al. [9,19]
Promote green spaces in the company. Example: eco-design	Likhitkar and Verma [59]
Enable workers to take waste from home to work, inculcating the practice of waste separation and recycling in the home–work–home relationship	Renwick et al. [21]
Create environmental goals for the company and use communication channels to involve workers in this mission	Bombiak and Marciniuk-Kluska [34]
Adopt and monitor environmental commitments with suppliers	Gómez et al. [61]
Define the annual budget for the implementation of environmental initiatives by HRM	Bombiak and Marciniuk-Kluska [34]
Provide advisory services and support for solving ecological problems	Bombiak and Marciniuk-Kluska [34]
Prepare sustainability reports annually	Bombiak and Marciniuk-Kluska [34]
Recognize the involvement of workers in planning and green management activities	Ahmad and Nisar [36]
Encourage relations between employees to produce solutions to environmental issues. Examples: working groups and the elaboration of newsletters	Tang et al., Renwick et al., Daily and Huang [21,35,69]
Provide incentives for workers to submit green initiatives/promote team activities (e.g., environmental project competition)	Bombiak and Marciniuk-Kluska, Likhitkar and Verma [34,59]

1.1.3. Transversal Environmental Sustainability Practices in the Literature

For this study, it was considered relevant to conduct a survey of green practices that cut across various corporate dimensions, as these indirectly or directly touch the universe of HRM [70]. The performance of environmental management (EM) depends on the human resources that operationalize the strategy on a day-to-day basis [17], so it is vital that HRM maximizes employee motivation and engagement and ensures compliance with the corporate strategy. The examples listed in Table 7 aim to demonstrate the omnipresence of the concept of HRM in companies' environmental sustainability practices, from home office and car-pooling policies to the choice of gifts offered to employees and actions or disclaimers regarding good environmental practices.

Table 7. Transversal environmental sustainability practices.

Category	Transversal Green Practices in the Organization	Author(s)
Digital	Preference for home office or hybrid/flexible work;	Mamatha and Bharmappa, Amutha [55,70]
	Preference for teleconferences, interviews, and virtual meetings (versus face-to-face meetings that require travel);	
	Preference for digital manuals;	
	Online training/e-learning.	
Mobility	Company public transport, fleet of electric cars, bicycles;	Mamatha and Bharmappa, Amutha, Murari and Bhandari [55,70,71]
	Subsidizing passes for use of public transport;	
	Car-pooling policies (organize car-sharing framework);	
	Preference for the use of stairs instead of elevators.	
Products and waste	Total recycling of waste;	Mamatha and Bharmappa, Amutha, Murari and Bhandari [55,70,71]
	Partnership with organizations that treat waste and give it new uses;	
	Offer of ecological gifts (e.g., reusable shopping bags);	
	Encourage workers to bring plates and mugs to avoid disposable ones;	
	Preference for organic products (coffee or tea) and fair trade;	
	Preference for recycled paper and recycled toners;	
	Preference for providing filtered water instead of bottles;	
	Avoid using polluting products (e.g., cleaning).	
Infrastructures	Energy-efficient infrastructures (low-consumption lamps, timers on switches, photovoltaic panels);	Mamatha and Bharmappa, Amutha, Murari and Bhandari, Opatha and Arulrajah [20,55,70,71]
	Preference for office materials and furniture made from recycled materials;	
	Provide parking for bicycles/electric cars;	
	Green infrastructures using plants;	
	Large spaces with natural light to reduce electricity consumption (connect the smallest number of lamps).	
Performance	Elimination of workers' identification cards;	Mamatha and Bharmappa, Amutha, Murari and Bhandari, Opatha and Arulrajah [20,55,70,71]
	Reducing the number of prints on paper and avoiding color printing (green printing);	
	Preference for electronically filling out documents and digital files;	
	Conducting regular energy audits;	
	Consumption of natural water instead of refrigerated water (reduce electricity costs);	
	Avoid leaks in drainage systems for efficient use of water;	
	Shut down the computer when not used (instead of hibernating).	
Production	Green production (care in the use of water and the drainage system; use of low-harm chemicals);	Mamatha and Bharmappa, Likhitkar and Verma, Amutha, Murari and Bhandari [55,59,70,71]
	Use of alternative energies (solar, wind);	
Corporate events	Encourage plantations/vegetable gardens on company premises and workers' homes.	Mamatha and Bharmappa, Amutha, Murari and Bhandari [55,70,71]
	Develop environmental corporate activities involving all stakeholders (improves green identity and brand image);	
	Planting trees on workers' birthdays or annually (promotes green spaces and worker recognition).	

1.1.4. Benefits, Constraints and Challenges of GHRM

The adoption of Green Human Resource Management has several benefits for organizations. However, some constraints to its implementation and future challenges should be addressed. In this context, it is important to study and control some variables so that the environmental and human objectives of the organization are successfully achieved.

Several authors have studied and identified the benefits, constraints, and challenges of Green Human Resource Management.

Table 8 compiles this discussion, accounting for the respective impact at three levels: (i) macro level (society), (ii) meso level (organization), and (iii) micro level (worker).

Table 8. Benefits, constraints and challenges of GHRM.

	Macro (Society)	Meso (Organization)	Micro (Worker)	Author(s)
Benefits		Promotes a competitive advantage through economics and environmental sustainability		Renwick et al., Jabbour and de Sousa Jabbour, González-Benito and González-Benito [14,24,72]
		Allows the organization to analyze its environmental impact and solutions for improvement		Farzana [37]
		Promotes a healthy working environment (green spaces, less paper consumption)		Opatha and Arulrajah, Farzana [20,37]
	Preserve the environment and its sustainability			Mehta and Chugan, Farzana [37,51]
			Increases the motivation and confidence of workers by allowing them to conduct environmentally friendly practices	Likhitkar and Verma, Farzana [37,59]
			Improves the relationship between management/bosses and workers	Likhitkar and Verma [59]
		Improves organizational reputation	Increases the retention rate of customers and workers	Likhitkar and Verma [59] Muisyo et al. [73]
			Increases employee loyalty and well-being	Likhitkar and Verma [59]
		Allows the organization to improve its performance		Deshwal, Likhitkar and Verma [43,59]
		Reduces the company's overall costs		Deshwal, Opatha and Arulrajah [20,43]
	The balance between financial performance and environmental protection			Daily and Huang, O'Donohue and Torugsa [69,74]
	Emergence of new, more sustainable business opportunities			Santos et al. [75]
Constraints		The non-green environmental culture of the organization	Factors inherent to the worker (personality, values, lifestyle)	Labella-Fernández and Martínez-del-Río, Vahdati and Vahdati [76,77]
		Limited digital capacity of the organization (at the technological level—equipment)	Pressure on time management and efficiency of functions	Labella-Fernández and Martínez-del-Río, Vahdati and Vahdati [76,77]
		Fragile internal communication channels	Knowledge of the worker (qualifications, knowledge, digital literacy)	Labella-Fernández and Martínez-del-Río, Vahdati and Vahdati [76,77]
		High investment and low return (initial phase)	Different motivations for the environment among workers	Mehta and Mehta [4] Kodua et al. [78]
		Lack of environmental guidance from the top levels of the organization		Tanova and Bayighomog [79]
	Lack of adaptation of some sectors of activity			Amrutha and Geetha [27]

Table 8. *Cont.*

	Macro (Society)	Meso (Organization)	Micro (Worker)	Author(s)
Challenges		Implement GHRM planning across the entire organization		Farzana [37]
		Lack of green infrastructures and technologies		Farzana [37]
	Need for continuous process development, marked by global trends and regulatory instruments			Agrawala et al. [80]
		Difficulty in transforming a traditional HRM attitude to GHRM	Difficulty in measuring the effectiveness of GHRM practices on workers' behavior	Mehta and Mehta [4]
		Implementing a green culture is a time-consuming and complex process		Mehta and Mehta [4]
			A lack of knowledge in environmental matters can generate limitations and a lack of cooperation between the organization's specialists	Fayyazi et al. [81]

Looking closely at the facts in Table 8, one of the most significant constraints that could affect the implementation of a GHRM is the intrinsic resistance of the organization's human capital. Although the benefits associated with GHRM are many, particularly in terms of overall costs, motivation, and employee retention, which results in an important competitive advantage, it is impossible to ignore the challenges inherent in implementing management that presupposes deep and transversal change processes. The path to an effective GHRM will involve a solid initial investment, complex multidimensional planning, and a system of continuous improvement, bearing in mind the changes that are emerging at a global level.

2. Methods

Based on a qualitative-intensive methodological design [82], the research question that guided this study was the following: *Which are the Green Human Resource Management practices implemented in companies operating in Portugal?*

The main research goals were as follows:

1. Identify Green Human Resource Management practices in companies operating in Portugal that have environmental management system certification, specifically the ISO 14001 standard.
2. Identify transversal environmental sustainability practices in companies in Portugal with the ISO 14001 standard.
3. Identify benefits, constraints, and challenges for companies associated with GHRM from the perspective of their Human Resource Management professionals and those responsible for environmental sustainability.

2.1. Procedures and Sample

Based on an exploratory approach, the inclusion criterion was defined as companies in Portugal certified with the ISO 14001 standard since this certification constitutes a guarantee of concern and application of environmental measures by organizations [9].

Considering the sampling strategy, we used a convenience sample. Companies were selected to participate in this study, considering the following criteria, many of them resulting from a previous research work: (i) sector of activity, in order to obtain a comprehensive plot that encompassed several areas of activity; (ii) associativity that demonstrates awareness for the environmental cause, namely associated companies from the Business Council for Sustainable Development (BCSD) Portugal; (iii) recognition by the Science

Based Targets initiative (SBTi) and validation of the organization's goals; and (iv) awards and distinctions advertised on the official pages of companies or on news channels that, from the outset, identify and reinforce the assumption that these organizations implement Green Human Resource Management practices. Between the beginning of February and mid-May, 133 companies were contacted: 84 people via email and 49 via LinkedIn, of which 28 responded to the contact, and 15 freely agreed to participate in this research. The interview phase was concluded when theoretical saturation was reached.

A group of 15 individuals participated in the present study, with the following socio-professional characteristics: 10 female and 5 male; the average age of the participants was between 41 and 50 years, with the youngest participant being below 30 years old and the oldest being between 51 and 60 years old. Regarding literary qualifications, most of the participants had a qualification at the higher education level. In total, 1 participant had secondary education; 8 had a bachelor's degree, 5 had a master's degree, and 1 participant had a doctorate. The educational background of the participants was quite diverse, varying between human resources (8 participants), psychology (2 participants), engineering (2 participants), sociology (1 participant), environmental management (1 participant), and geology (1 participant).

The average seniority of these professionals in the respective organizations was 7 years. Concerning their current position, these professionals had diverse functions distributed by the departments of human resources (HR) and environmental management (GA).

Regarding the characterization of the organizations that the participants represented, we identified different profiles regarding their size, location, and sector of activity. Of the 15 organizations, only 3 were medium-sized companies with less than 250 workers. The remaining 12 companies had more than 250 workers; namely, 1 had between 250 and 499 workers, 4 had between 500 and 1000 workers, and 7 had more than 1000 workers. As for their location, the district where they had infrastructures certified with ISO 14001 was considered. Regarding the sector of activity, different enterprises were considered, thus guaranteeing the diversity required for this exploratory study (please check Table A1 in Appendix A).

2.2. Instruments and Analysis Procedures

In line with the goals proposed for this study, two central techniques for collecting data were used: (i) semi-directive interviews and (ii) document analysis. The latter was used in the final phase of the investigation to reinforce the information collected through the interviews. Choosing interviews as a data collection procedure facilitates a comprehensive understanding of the phenomenon under study, as it not only allows the identification of GHRM practices recognized by the interviewed professionals but also clarifies their view of the conditions, benefits, and challenges of GHRM. This exploratory method was used by researchers such as Paillé et al. [83] and Yu et al. [84], who interviewed managers to corroborate the relevance of the GHRM measurement instrument they developed, enabling the exclusion of items or practices that did not exist or were not relevant in the context of the organizations studied. In this case, the aim is to guarantee the rigor of the exploratory research, using more than one information collection technique to ensure that the GHRM practices identified are accurate and current. Indeed, concerning documentary analysis, since GHRM is a recent and potentially unknown topic, there was a need to explore official data available from participating companies (institutional websites of companies, sustainability reports) in order to include other GHRM practices not identified by the participants during the interviews, mainly due to lack of knowledge. Therefore, their complementarity justifies the choice of these two main techniques—interview and document analysis.

On the one hand, interviews allow us to clarify how the GHRM practices indicated are planned and carried out, using the vision of those who are the drivers of these practices and strategy among workers—human resource professionals together with those responsible for the environmental sustainability strategy of companies certified with the ISO 14001 standard in Portugal. On the other hand, more content is gathered through the documen-

tary analysis of official and credible sources, and information previously provided in the interviews is validated.

After confirming the participants for the collaboration in this study, interviews were scheduled, according to the availability of the participants, via Zoom or Teams. The choice of the online format, to the detriment of face-to-face interviews, was guided by the agreement with the assumptions of reducing the impact of the carbon footprint valued by the theme of environmental sustainability addressed in this study.

The semi-directive interviews were conducted using a script organized into a total of seven blocks, with three main parts: the first part related to the identification of the interviewee and the company; the second part related to the identification of HRM practices subdivided into the five areas under study, as well as the survey of general environmental sustainability practices; and, finally, a third part that sought to identify the benefits, constraints and future challenges of HRM implementation as perceived by the interviewee. At the end of the interview, there was room for final comments and suggestions.

Specifically, the first section sought to characterize the interviewee ("What is your role in the company?") and the organization ("How many employees does the organization currently have in Portugal?"). Then, in a second block, we focused on pertinent questions to ensure good contextualization and interconnection of the topics, addressing the concept of GHRM ("Are you familiar with the concept of GHRM?"). It should be noted that, in order to ensure an effective survey of GHRM practices implemented by organizations, and in order to enlighten the interviewee about the concept, clarification was made about what GHRM is in the context of the current research and in light of the literature. This clarification was only given in cases of unfamiliarity with the subject and only after a question about familiarity with GHRM had been asked.

The third block brings together questions about GHRM practices ("Focusing on specific HR areas, I would now ask you to tell me about the practices implemented, using concrete examples whenever possible") organized into the five areas of study, namely green recruitment and selection ("How are job vacancies communicated and how are candidates selected?"); green training and development ("Does environmental management training cover all the company's roles and departments?"); green performance management and evaluation ("Is there a performance appraisal designed to cover environmental metrics?"); green remuneration and rewards ("What kind of rewards and benefits are associated with green practices by employees?"); and green organizational culture ("Does the company have a green organizational culture, based on an ecological vision and values?").

The company's general practices with a focus on environmental sustainability were addressed in the fourth block ("What other green initiatives do you implement across the organization?") in order to identify other cross-organizational green practices that demonstrate the company's green vision—as perceived by the interviewee—which, in exploratory terms, could even be related to one of the five areas mentioned above.

The fifth block focuses on the benefits identified by the interviewee, at the employee, company, and global levels ("If you could highlight the best tangible benefit for your organisation of implementing GHRM, what would it be?"), followed by the sixth and seventh blocks that focus on the constraints and future challenges, respectively, according to the interviewee's perspective and also distinguished at an individual, corporate, and societal level.

The interviews were conducted between the beginning of February and the middle of May 2023. All interviews were recorded in audio format, and their transcripts constituted the corpus of the work, which was then subjected to content analysis. The shortest interview lasted 01h04, and the longest lasted 2h46, with an average duration of 01h33. These interviews were quite heterogeneous in terms of their duration due to the freedom of speech that the interviewer intended to give the interviewee to obtain the greatest possible depth on the subject.

After conducting interviews and being attentive to the aim of this study, they were selectively transcribed since transcription is a procedure that involves "reducing, inter-

preting and representing oral conversations so that the written text is understandable and has meaning" [85] (p. 127). In this way, the focus on the accuracy of the information content was guaranteed [86] as well as the fulfillment of the deadlines defined for this research. It should be noted, however, that all the necessary steps were taken for a secure, accurate, and reliable transcription, using methods that involved (i) copying the recordings on more than one device with restricted access to the researcher, (ii) free NCH® Express Scribe software (13.06 version) to support the task through the possibility of repetition and audio slowdown, and (iii) support of notes taken at the time of the interview. Also, in this process, an initial hearing of the recording in full was conducted to identify the particularities of each interview, as well as a subsequent review to compare the transcribed text with the recording.

Subsequently, exploratory documentary research was conducted on the participating companies to support and solidify the information collected in the interviews with the company's external communications. Based on this study's reliability and validity criteria and considering its objectives, we conducted document analysis through different information channels, such as (1) the organizations' official websites; (2) official company pages on social networks, namely LinkedIn and Facebook; and (3) the Google search engine. The collection of information from the organization's official website was in depth, analyzing all available menus and published texts, namely sustainability reports, newsletters, and other official documents. Regarding official pages on social media, a search for publications was carried out between May 2022 and May 2023 on the topic of "environmental sustainability". Finally, using Google search, relevant news on environmental issues was collected and placed in the search, along with the name of each organization, and keywords such as "sustainability", "environmental", "carbon footprint", "workers", and "collaborators".

Regarding the analysis procedure, the data from the interviews were categorized and coded to reduce the complexity and to enhance understanding and interpretation. Therefore, transcripts were analyzed using thematic analysis [87], highlighting and coding the relevant extracts. Themes and subthemes were refined, revised, and organized into categories according to the relationship between the codes, coherently [88]. To ensure the reliability and validity of the data obtained, categories and citations were evaluated separately by two researchers (analysts' triangulation) [89].

3. Results

In this section, we present our analyses of the responses obtained from the participants in this study. Data presentation is organized similarly to the presentation in the literature review, that is, focusing on the five main areas of GHRM (recruitment, training, performance management, benefits, and organizational culture), as well as on transversal environmental sustainability practices and, finally, on the benefits, constraints, and challenges associated with GHRM in the micro, meso, and macro levels.

3.1. GHRM Practices in Portugal

3.1.1. Green Recruitment and Selection

It can be seen from the empirical analysis that some practices recommended in the literature are already being applied in companies in Portugal; namely, the recruitment and selection process adopted is increasingly digital. For example, (i) job advertisements are published on online platforms and (ii) the recruitment process is conducted through an online platform (including submission of documents).

However, some practices prevail and, according to the literature, limit multidimensional environmental strategy implementation. The maintenance of paper documentation is due to legal impositions (e.g., employment contracts), as referred to by I4 (Interviewee 4) (*"I would be a fan of paper-free, but legal constraints may not allow it, and therefore, contracts are printed on paper" (Interviewee 4, Human Resources Director, Company 4))*, but also to Portuguese workers' lack of digital literacy (e.g., paper application forms).

In terms of job advertisements, it is not common practice to share a company's environmental values, except for vacancies intended for environmental positions requiring specific skills for the function performed. Plus, in the section process, there is no preference between candidates regarding their environmental values and motivations, as I3 states, "*We do not discriminate against any candidate because they are not green*" (Interviewee 3, Head of Sustainability, Company 3).

3.1.2. Green Training and Development

In green training and development, companies make a notable effort to bring this environmental theme to their workers. In two specific cases, the creation of sustainability academies is confirmed. Considering the key practices of the literature, we perceive that environmental training is cross-sectional and mandatory, and mostly takes place in onboarding; "*All workers who enter the company must undergo training in the environment. One of the sections of onboarding is the environmental area, all without exception.*" as pointed out by I10 (Interviewee 10, Head of Environment, Health and Safety, Company 10).

Also, the contents of environmental training are varied, covering topics such as biodiversity, management of water, paper and electricity consumption, and waste separation. The effectiveness of the training is applied by a small number of the companies interviewed, as stated by I11: "*In all training, there is a final evaluation and a survey with improvement suggestions*" (Interviewee 11, HR Business Partner, Company 11).

Despite the increasing emphasis on the theme among workers, there is a superficiality in the approach that implies reflection. Training on environmental issues fits into a global, general, and primarily welcoming phase for new workers, and there is no real assessment of the individual training needs of each worker. This, combined with the lack of performance analysis of post-training, can negatively influence the effectiveness of the training. These aspects are often neglected due to a lack of time and resources in the HR department, as pointed out by I12: "*We do not measure the impact levels of training at this level, due to scarcity of resources and time in the HR Department*" (Interviewee 12, Human Resource Specialist, Company 12).

3.1.3. Green Performance Management

The empirical analysis shows that although performance evaluation is an underdeveloped area of GHRM, there is a concern for correct, conscious, and shared environmental performance, through a willingness to involve and make managers responsible for evaluating environmental performance and achieving a general mentality of co-responsibility through informal feedback and participation of workers. In fact, the importance of the role of the managers is frequently mentioned, and it is understood, as I10 says, that "*This should be the main point of management and against which they should also be evaluated*" (Interviewee 10, Head of Environment, Health and Safety, Company 10).

However, the reality of companies in Portugal shows that they still need to prepare for a planned and effective green performance assessment. Only two participating companies mention evaluating workers on their ecological footprint without detailing the metrics for this purpose. Thus, it is observed that environmental performance assessment exists only in technical functions associated with the environmental area so, in general, the performance evaluation system with an environmental component does not exist. This shows that it is extremely important for the job description to include environmental aspects on which workers will subsequently be assessed, regardless of whether their job is linked to this area. In this regard, it should also be noted that public companies are limited to the legal guidelines to which they are obliged, as I8 mentioned "*We are obliged to have the SIADAP (Integrated performance management and evaluation system in Portuguese public administration.), and if the "environment" is not there explicitly, we cannot have "environment" in the competencies*" (Interviewee 8, Head of Human Resources Division, Company 8).

3.1.4. Green Compensation and Benefits

Considering the data collected, this is an area of HRM that is little explored and valued in the participating companies. Over half of those interviewed did not mention this type of award or incentive as a frequent practice in their company, as I13 says that "*We do not have much of a benefits or bonus policy, neither in the environmental area nor in any other area*" (Interviewee 13, Continuous Improvement Manager, Company 13). However, few examples of monetary awards are identified, despite their restriction to the top levels within the achievement of the company's global goal, as I9 alerts to the fact that "*only the management committee, and some second-level departments, have annual objectives and cover the environmental part insofar as it covers the company's sustainability objectives*" (Interviewee 9, Human Resources Director, Company 9). Also, green benefits are only mentioned by companies with economic activity compatible with offering discounts on services or purchasing green equipment (e.g., energy, mobility solutions).

Regarding non-monetary awards, they are not widespread either, but some examples can be identified like annual meetings of workers where the most sustainable teams are rewarded, as indicated by I11: "*We have at least one annual meeting where we do (. . .) a general assessment, namely how much paper we save. . . and we reward the winning teams. We implement this part of praising a lot*" (Interviewee 11, HR Business Partner, Company 11). Plus, some groups or internal competitions are mentioned, in which the most ecological worker is distinguished (e.g., eco-driving).

3.1.5. Green Organizational Culture

Green organizational culture is the most complex and wide-ranged area of HRM because it is the day-to-day actions of workers and the opportunities granted that will build green awareness, values, and commitment. This study demonstrated that there is a green culture across participants, although with distinct levels of maturity. The clarity for workers regarding the green vision of their company is strongly linked to the business sector and internal communication on environmental issues, which is stronger in those companies that perform in environmental business and have good and diverse channels of communication (e.g., corporate radio, digital channels), as stated by I6, who has "*a dynamic communication channel with content on the topic, challenges, which are normally more organized by marketing in collaboration with human resources*" (Interviewee 6, Development Manager Human Resources, Company 6). Also, it is noted that there is freedom of initiative for workers in the company's environmental strategy, and employee involvement stands out in those companies who assume regular and strong environmental communication, as I9 mentions, saying "*The fact that we have this constant pressure to bring sustainability to the business ends up rubbing off on our people*" (Interviewee 9, Human Resources Director, Company 9).

However, there are key aspects for green organizational culture to be disseminated among workers that cannot be overlooked by companies; namely, the workers' involvement is related to the real opportunities for participation that the company provides (e.g., activities should happen during labor time, as affirms I13, showing that they "*did not have the participation we wanted because the company also did not allocate (. . .) working hours so that people could do corporate volunteering*" (Interviewee 13, Continuous Improvement Manager, Company 13)). Also, companies must look at their reality and try to adapt in an agile and sustainable way. For example, I7 said they "*have a newsletter, but it only reaches those who have email, which is 30%*" (Interviewee 7, Human Resources Director, Company 7). As the lack of digital literacy may negatively impact green organizational culture, workers' freedom of initiative and participation must also be real.

3.2. Transversal Environmental Sustainability Practices in Portugal

Focusing on additional transversal environmental sustainability practices implemented by the companies' participants in this study, we present the results below in Table 9, distinguishing different categories, aligned with the literature review.

Table 9. Transversal environmental sustainability practices identified in this study.

	Practices Identified
Digital	Preference for hybrid work E-learning training
Mobility	Fleet renewal for electrics Promotion of car-sharing Encouraging the use of public transport and electric bicycles
Products and waste	System of waste separation and management Preference for the use of recycled articles and organic products Welcome kit with sustainable items (e.g., bottles, mugs) Use of filtered water systems Promotion of a fair trade and circular economy
Infrastructures	Eco-design and creation of outdoor green spaces More sustainable facilities with good energy efficiency Acquisition of recycled furniture Car parks with electric charging stations
Performance	Actions in terms of saving water and equipment energy Acquisition of more sustainable systems Elimination of access cards
Production	Use of renewable solutions to support energy costs (e.g., photovoltaic panels)
Corporate events	Cleaning beaches or green spaces Tree planting Actions to raise awareness of biodiversity and nature within the workers or the community Investment in green gamification

This study showed that there are several practices that have a positive impact on companies' environmental strategies that are aligned with the GHRM. With regard to the use of digital technology, it is clear that hybrid work is the most used, although it is limited to companies that cannot apply it because of their activity. There has also been an increase in training through e-learning models; however, face-to-face and "on the job" training are still frequent, often associated with the industry but also with the employees' lack of digital literacy, as I7 states that "*It is all face-to-face because with these employees, doing online training is almost impossible*" (Interviewee 7, Human Resources Director, Company 7). Electric mobility has been widely embraced by companies, with a growing trend towards the total or partial acquisition of an electric fleet. In addition, the use of public transport and electric bicycles has been promoted, and there are partnerships with suppliers for employees to purchase them at more advantageous prices. I5 even has "*(. . .) a set of bus lines dedicated to employees*" (Interviewee 5, HR Business Partner, Company 5). It should also be noted that car-sharing is a frequent practice among workers, either managed by themselves or with involvement of the company; I10 states that "*We have a car-sharing platform*" (Interviewee 10, Head of Environment, Health and Safety, Company 10). Regarding the goods used in the companies, there is a growing concern with the use of sustainable products, not only in the welcome kit where the items mentioned include water bottles and reusable cups or lunch boxes like I9 (Interviewee 9, Human Resources Director, Company 9) shared, but also in daily business through recycled items such as toners and paper. In addition, there is a preference for fair trade and the circular economy, as stated by I13 (Interviewee 13, Continuous Improvement Manager, Company 13) ("*There is also the concern of purchasing from local suppliers*.") and I4 (Interviewee 4, Human Resources Director, Company 4) ("*We have a project to recover pallets*"). In the area of nutrition, there are also positive initiatives, not only with regard to the selection of products cooked in the cafeterias but also in the management of waste, as indicated by I5 (Interviewee 5, HR Business Partner, Company 5), who will be cooking healthier and more organic food in the company's new facilities and when there is space for the "*separation of waste and organic waste that can be used for composting*". Filtered water machines were also mentioned, particularly by I9 (Interviewee 9, Human Resources Director,

Company 9), whose company offers a recycled bottle to all employees. Sustainability starts at home, and several practices are identified that demonstrate companies' investment in becoming greener, such as moving to more sustainable buildings or campuses with green spaces, or redesigning facilities to be more connected to the environment, with small gardens and using eco-design as an ally. An example of this is I13's statement that "*our spaces breathe green, starting with the wallpaper that looks like a forest*" (Interviewee 13, Continuous Improvement Manager, Company 13). Also noteworthy is the creativity of some companies who, with the participation of their own employees, have built sustainable spaces made from recycled materials, such as I10's company, where "*We replaced the light fixtures and created a terrace made of old pallets*." (Interviewee 10, Head of Environment, Health and Safety, Company 10). Ecological performance is also valued and involves raising awareness among human resources to act with compliance and technological strategies that help make performance more effective, such as eliminating the physical employee card to access the facilities, using a smartphone instead, or automatically turning off the lights in the facilities at the end of the day. In the case of I6, printers have been reduced to a minimum to avoid printing—"*We no longer have printers per service so as not to encourage printing*." (Interviewee 6, Development Manager Human Resources, Company 6). In companies related to the environmental sector, water saving was highlighted by tanks, such as I7's company, where "*The washing of the truck is essentially done with rainwater*" (Interviewee 7, Human Resources Director, Company 7).

Regarding production, the choice of alternative energies is common, such as photovoltaic panels, to make it more sustainable. An example of this is highlighted by I3 (Interviewee 3, Head of Sustainability, Company 3) and I13 (Interviewee 13, Continuous Improvement Manager, Company 13), who stated that "*The transition to 100% renewable electricity in our offices is something that is already happening*" and that "*We have created a park for vehicles with electric charging, powered entirely by photovoltaic panels.*", respectively. Finally, with regard to corporate events, it seems that the activities related to the environment promoted by various departments, including human resources, are fairly consensual among the participating companies, demonstrating their commitment to raising awareness of the issue among employees and the community. The most common are planting trees and cleaning beaches or green spaces, "*because they are usually supported by local authorities*", says I5 (Interviewee 5, HR Business Partner, Company 5). However, it is possible to identify activities to raise awareness of biodiversity and nature among workers or the community through art, as referred to by I6 (Interviewee 6, Human Resources Development Manager, Company 6) ("*We made a mural about biodiversity and recycling*"), or through direct contact with species such as bees, as was the example of I14 (Interviewee 14, Head of People and Culture, Company 14). Also allied with new technologies, investment in green gamification is beginning to appear.

3.3. Benefits, Constraints, and Challenges of GHRM in Portugal

The empirical analysis demonstrated several benefits associated with GHRM that affect workers, companies, and civil society. However, participants raised significant constraints and challenges that GHRM in Portugal may face.

3.3.1. Benefits of GHRM in Portugal

Concerning the benefits associated with GHRM, it was possible to identify that most of the interviewees believed that GHRM helps the preservation of the environment and its sustainability. Regarding the impact on the companies, it is believed that GHRM allows the organization to improve its performance and reputation. Also, it reduces the company's overall costs and "*In the long term, it will pay off much more, such as the platform to digitize the HR process*" (Interviewee 11, HR Business Partner, Company 11). Finally, it promotes a competitive advantage as "*It brings a strong brand and also the financial component.*", affirms I6 (Interviewee 6, Human Resources Development Manager, Company 6).

GHRM also has a positive impact at a micro level, helping increase customer and worker retention, "*especially from new generations*", believes I2 (Interviewee 2, L&D Coordinator, Company 2). The employees' motivation is also mentioned, and I15 (Interviewee 15,

Human Resources Director, Company 15) believes that this different approach "*will make employees (. . .) much more soulfully connected to the company.*" Ultimately, "*the company's green awareness promotes employee well-being*", as referred to by I11 (Interviewee 11, HR Business Partner, Company 11).

3.3.2. Constraints of GHRM in Portugal

Regarding the macro constraints associated with GHRM, participants mentioned the lack of adaptation of some sectors of activity like transport. I7 states that "*In the case of trucks, the problem is when and where to load the trucks. I do not know how this will be possible.*" (Interviewee 7, Human Resources Director, Company 7). Legal obligations, such as notarized signatures in many documents, or the lack of state financial support, are also limits, as affirms I3, because their application "*does not apply to companies in terms of electric chargers.*" (Interviewee 3, Head of Sustainability, Company 3). In this matter, I15 (Interviewee 15, Human Resources Director, Company 15) believes that "*Governments also have an important role in this, which is to create incentives for this to happen.*"

Finally, the lack of specialized suppliers for electric bicycle fleets is a constraint, as says I2, because "*sometimes the companies that provide these services are not expecting what we ask for*" (Interviewee 2, L&D Coordinator, Company 2). Likewise, the lack of public transport serving the entire region is also mentioned, as it is difficult to attract people, especially the new generation.

Regarding the constraints at a meso level, i.e., in the company's perspective, it is perceived that GHRM implies a high investment, as affirms I13: "*These measures are very conditioned (. . .) because they involve many costs*" (Interviewee 13, Continuous Improvement Manager, Company 13). Also, it will be difficult to put it into action if there is no environmental guidance from top levels, as happens in I15's company, where "*The managers' vision is not very green*" (Interviewee 15, Human Resources Director, Company 15). Plus, in a department that is usually short of people, the lack of human resources to manage this strategy is, certainly, a constraint, as I8 notes: "*My biggest obstacle is having enough people in HR to do what we dream of as a team*" (Interviewee 8, Head of Human Resources Division, Company 8).

In addition, at a micro level, a perceived constraint was the fact that there are different motivations towards environment among workers, and "*some people say that 'this is nothing', therefore, there is little credibility and true perception of this theme.*", as shared by I10 (Interviewee 10, Head of Environment, Health and Safety, Company 10). Plus, workers' level of education and digital literacy are heterogeneous, and there are some companies where most workers do not even have an email, for example.

3.3.3. Challenges of GHRM in Portugal

The future of GHRM presents some challenges that should be considered. At a macro level, there is a need for the continuous development of processes, influenced by global trends and regulatory instruments. Also, it is mentioned that the focus on sustainability is limited by the educational system. I13 (Interviewee 13, Continuous Improvement Manager, Company 13) argues that "*There is always legislation emerging that can directly affect our business, and it is always towards a more sustainable environmental path. This issue of sustainability is not considered in many educational programs (. . .), and therefore, people in the human resources field are often not sensitive to these issues*".

At a meso level, inside the companies, it is challenging to implement cross-organizational GHRM planning, and transforming traditional HRM attitudes to GHRM is difficult and time-consuming, as shared by I12 (Interviewee 12, Human Resources Specialist, Company 12): "*Changing habits is an extremely complex and time-consuming process*".

Finally, at a micro level, the issue of measurement must not be forgotten, as it is difficult to measure the effectiveness of GHRM practices on worker's behaviors, keeping in mind that the organization needs to be completely aligned, as I10 (Interviewee 10, Head of Environment, Health and Safety, Company 10) points out: "*I would say that it is difficult to measure. (. . .) It is very difficult to do because it requires all people to be involved here.*" Additionally, tested measuring tools

should be developed in this field: "*There is not much information about this. Companies develop inside doors*" (Interviewee 7, Human Resources Director, Company 7).

4. Discussion

The concept of GHRM is recent, and a generalized unawareness on the part of the participants was identified, associated in specific cases with a broader concept of Sustainable HRM, something that accompanies the development of the literature, which acts simultaneously on a broader and more specialized plane [30].

Regarding the primary areas of GHRM, a greater presence of the environmental aspect is identified in the training areas of green development and green organizational culture, which guarantees the freedom of participation of workers in an increasingly valued bottom-up orientation, as well as consistent internal communication on the subject.

Looking at the area of green recruitment and selection, we found that at the level of digitization of the system, there is a markedly positive trend since most companies adopt digital measures that allow processes to be sped up and, consequently, a guaranteed reduction in paper consumption [37]. It is important, however, to highlight the involuntary limitations that many companies face that run counter to the environmental strategy they would like to implement: legal constraints and lack of digital literacy of candidates, which determine a preference for paper.

There was no direct evidence of a preference for pro-environment candidates, excluding the sharing of the company's environmental strategy from job advertisements. This finding reveals that participating companies may be limiting the inclusion of candidates who act voluntarily based on environmental citizenship, which contributes to the organization's sustainability [39]. In addition, the omission of companies' green values in advertisements may, according to Saeed et al. [38], withdraw the candidacy of workers with these values because they are unaware of the way in which organizations act in this scope. The implementation of environmental criteria in the description of functions other than those directly associated with the environmental management of companies, as argued by Mehta and Mehta [4], was not identified in a generalized way.

Green training and development, as mentioned above, is the GHRM area at a more advanced stage, with a positive frequency of training actions, mainly in the onboarding phase, which covers all workers in a transversal way. This coverage is understood by several authors as crucial for the success of the results [48,49]. However, an important aspect is that this training does not assume a specialized direction, often considered a wider sustainability 'package'. The training evaluation is mentioned but not generalized by the companies studied. This action not only concerns post-training evaluation but also guarantees its effectiveness and improvement of the environmental performance of workers [14].

Regarding the area of green performance management, environmental criteria were undervalued from the outset, so it was possible to understand the need for adherence to establishing key environmental performance indicators in the functions in a transversal way. It has only been observed that there are environmental metrics in the functions associated with this area, something that reflects that environmental responsibility is not associated with all workers in a uniform way, assuming the absence of environmental criteria in the job description of all workers, as Mehta and Chugan [51] and Mwita [52] defend. The interviewees do not recognize the green performance management process as simple and objective. However, it is accepted by the majority that the involvement of bosses is a key part of the success of the environmental performance of workers. Despite this conjecture, it is found in this study that the bosses are not yet deeply committed, a fact that may suggest the need to integrate the evaluation of the performance of the teams into the evaluation of the bosses themselves, something already recognized by Ahmad and Nisar [36].

Green compensation and benefits and, specifically, a system of incentives and benefits for good environmental performance are not generally rooted in the participating companies. Despite this finding, there are monetary benefits in some cases, with a scope limited to executive levels and focused on achieving the company's objectives and not on individual performance. This fact

departs from the understanding of Forman and Jorgensen [58], who argue that the system should be applied to workers as it promotes an increased commitment to environmental practices. As far as non-monetary benefits are concerned, they have not been solidified.

Finally, this research demonstrates that, in green organizational culture, the clarity of the organizational green vision on the part of workers exists in companies that are invested in transferring the environmental strategy to the daily life of workers in an integrated approach, as defended by Renwick et al. [14]. Sharing the idea of Dumont et al. [46], this green culture is transmitted in the way organizations communicate, in the activities they conduct, and in the freedom and involvement they promote with them, and there must always be a congruence of green values. It is found that companies that implement GHRM assume a very pronounced level of clarity of green vision for their workers, especially when it comes to internal communication of green activities and the promotion of a green sustainable culture, both with positive impacts regarding person–organizational fit [90]. In the same way, in companies where consistent, diversified, bi-directional, and close internal communication is applied (often in the sense of informality), there is also a positive perception of the interviewees regarding the understanding of green culture on the part of workers. Given the results obtained, the involvement of workers is inherent in the conditions that the company provides, that is, in real opportunities for active participation in environmental initiatives.

Across all interviewees, GHRM is understood as something beneficial and relevant to companies' environmental strategies. According to the results, organizations' positive impact on the planet's environmental sustainability is assumed, made possible by the improvement of their performance and the responsibility that companies have towards their workers, today and in the future, and society. Furthermore, this globalized concern for the environment positively impacts organizational reputation, generating a competitive advantage and greater customer loyalty. This involvement with green issues also has an internal impact, with interviewees highlighting the increased motivation of workers and, consequently, the retention rate [59], which is extremely important if we consider the current challenges in recruitment and retention of talents.

In this study, however, it was possible to identify constraints that limit the implementation of GHRM in companies, particularly in terms of reduced state support and legal obligations [79] that still apply and that limit, for example, digitalization. Something identified by some interviewees is the fact that some sectors of activity have greater restrictions on what can be green practices [27], often related to dependence on fragile external offers, such as vehicle autonomy and limitations in the supply network for electric vehicles at the country level. Also highlighted is that the ability to respond to external impositions for a green strategy and the financial "lungs" of companies are different, with mention being made of the difficulty SMEs have in participating, on an equal basis, alongside large companies [74]. This high investment associated with GHRM, already identified by Mehta and Mehta [4], implies a green orientation and vision on the part of the top levels of companies that may often not occur. The lack of professionals in the HR area promoting these practices also has a negative impact. Many structural tasks overlap with GHRM initiatives. Also, a factor inhibiting the adoption of a GHRM raised by the participants is the different motivations and environmental literacy of workers, who may have more or less environmental sensitivity and knowledge [76,77].

It is clear from this study that there are several challenges to implementing GHRM, firstly due to the need for companies to be constantly updated on global trends or regulatory instruments that impact their activities. Organizations need elasticity to continue developing in a continuous improvement logic, as Agrawala et al. [80] argue. However, the future involves increasing environmental responsibility for companies, understood as a guarantee of the business's future. Likewise, the future must also involve a serious commitment on the part of academic entities to integrate these themes into the national education agenda, something also already signaled by some authors [3,52]. The transformation to a GHRM involves multidisciplinary and multidirectional internal mutations so that it is possible to convert the traditional HRM process into a solid GHRM.

5. Conclusions

5.1. Contributions of the Study

Considering the urgency of the theme of environmental sustainability in the current context in which we live and the still unexplored nature of Green Human Resource Management (GHRM) in Portugal, which was the object of study, this research aimed to contribute to the advancement of knowledge in this specific area of Human Resource Management, as well as make a call to action for organizations that want to initiate or deepen a sustainable path.

This study aims to have scientific and socioeconomic relevance. From a scientific point of view, it seeks to address a still underpopulated subject, initiating an exploratory path on GHRM in the Portuguese reality, considering analysis models and practices already identified in previous studies. The collected information allows for the enrichment of empirical analysis in this area and a mapping of the current reality of GHRM in Portugal, revealing some specificities of its operation, considering the Portuguese economic fabric. Indeed, it was possible to observe limitations of the public sector in implementing GHRM practices, as they are not provided for in the regulatory models on which they are based, and the difficulties of SMEs in keeping up with global trends that demand GHRM without compromising the sustainability of their business, due to unsatisfactory government support.

At the same time, this research has socioeconomic relevance in the sense that there is a great interest from parties in environmental issues, particularly civil society, generating mass pressure on the organizations that depend on it to implement a sustainable strategy. There is a perceived urgency for companies to apply a solid, transparent, and multifaceted system based on strong and rooted ecological pillars, in which GHRM must assume a guiding and facilitating conduct of action. This study emphasizes the importance of giving a prominent role to GHRM, which acts on and through the actors that constitute (or will constitute) the human capital of companies and that concretely conduct the processes that guarantee the effectiveness of the corporate environmental strategy [91,92]. In contradiction, reality still tends towards a more operational and environmental management focus, revealing gaps and a fragmented application of GHRM practices. This research aims to provide tools that provide an improvement exercise to organizations that already apply a GHRM, namely in adopting a holistic method, which promotes an immersive environmental experience for workers, fulfilling the essential green steps in each of the areas of HRM. Furthermore, the aim is to provide tools to organizations that intend to implement this type of management practice, suggesting the assessment of the GHRM policies outlined in this study and adapting them to their context.

It is concluded that the organizations of the future will have to imperatively include environmental sustainability in their strategy [93] and that GHRM will have significant growth in the coming years, which should go through a deeper integration, both in practice/intervention and academy/research in HR. It is important to couple these two worlds, deepening empirical knowledge and directing it to the needs of organizations while integrating into these entities the perceived learnings and the new talents that sprout, eager to positively impact the organizations that host them and the planet on which we live.

5.2. Limitations and Further Research Suggestions

This study includes some limitations, first, due to the inclusion criterion that limits the sample to companies holding ISO 14001. As such, broader research is suggested for the future, integrating companies that do not hold environmental certifications. Time constraints on the research, limiting it to less than one year, led to an exploratory study focusing on a diversified but limited sample. This limitation prevented a more comprehensive study that could bring more relevant empirical material to the literature with consistent or different results.

Indeed, despite the heterogeneity of the sample obtained in this study, comparative longitudinal research would be interesting to deepen the knowledge about each sector of activity and region.

The fact that GHRM is an emerging and unexplored concept, coupled with the lack of availability and time of the target audience, may have caused resistance and limited the participation of organizations in this study.

It is understood that adopting a mixed methodology could bring interesting results, allowing the debate of the workers' perspective regarding their involvement and green organizational culture compared with the perspective of the middle and top levels of the organization. A study with this methodological and significantly more comprehensive design would allow us to achieve a high representativeness.

On an even deeper scale, it is understood that with more extended studies and more resources, it would be interesting to conduct a survey of GHRM practices at the European or global level, as well as to identify the constraints and challenges that organizations in other national realities face for its implementation. It is anticipated that this gain of awareness of GHRM at a global level, resulting from the continuity of future research on the subject, may allow organizations to develop more rigorous and adjusted strategies, which promote the maximization of environmental results internal and external to organizations, in a logic of environmental co-responsibility.

Author Contributions: Conceptualization, J.P.C. and A.I.C.; methodology, J.P.C., A.I.C. and A.T.F.-O.; validation, J.P.C., A.I.C. and A.T.F.-O.; formal analysis, J.P.C., A.I.C. and A.T.F.-O.; investigation, J.P.C.; resources, J.P.C. and A.I.C.; data curation, J.P.C., A.I.C. and A.T.F.-O.; writing—original draft preparation, J.P.C.; writing—review and editing, J.P.C. and A.I.C.; visualization, J.P.C., A.I.C. and A.T.F.-O.; supervision, A.I.C. and A.T.F.-O.; project administration, J.P.C., A.I.C. and A.T.F.-O.; funding acquisition, A.I.C. All authors have read and agreed to the published version of the manuscript.

Funding: This work is financed by Portuguese national funds through FCT—Fundação para a Ciência e Tecnologia, under the project UIDP/05422/2020.

Institutional Review Board Statement: This study did not require ethical approval.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. General table characterizing the participants.

Interviewee	Interviewee's Company Sector of Activity Main CAE (CAE-Rev.3)	Nº Workers in Portugal Nº Workers in Portugal Number of Workers in Portugal	Location	Company's Year Foundation	Interviewee's Role	Educational Background	Educationa Level	Age	Gende	Tenure
I1	Manufacture of chemical products and manufactured fibers, except pharmaceutical products	<1000	Porto	1917	HR Director	Human resources	PhD	41–50	F	1 y 11 m
I2	Financial services activities, except insurance and pension funds	>1000	Lisboa	2000	L&D Coordina-tor	Engineering	Degree	41–50	F	7 y 10 m
I3	Computer programming and consultancy and related activities	>1000	Lisboa	1967	Sustainability Chief	Environmental engineering	Master	41–50	F	1 y 10 m
I4	Financial services activities, except insurance and pension funds	>1000	Braga	2007	HR Director	Human resources	Master	31–40	M	10 y 5 m

Table A1. *Cont.*

Interviewee	Interviewee's Company Sector of Activity Main CAE (CAE-Rev.3)	Nº Workers in Portugal Nº Workers in Portugal Number of Workers in Portugal	Location	Company's Year Foundation	Interviewee's Role	Educational Background	Educationa Level	Age	Gende	Tenure
I5	Head office and management consultancy activities	>1000	Lisboa	1999	HR Business Partner	Psychology	Master	31–40	M	1 y
I6	Other consulting, scientific, technical, and similar activities	<1000	Braga	1999	HR Develop-ing manager	Human resources	Degree	31–40	F	21 y 9 m
I7	Waste collection, treatment, and disposal; material recovery	<1000	Porto	2008	HR Director	Geology	Degree	41–50	M	4 y 1 m
I8	Waste collection, treatment, and disposal; material recovery	<250	Porto	1982	HR Chief	Human resources	Degree	41–50	F	21 y 7 m
I9	Postal and courier activities	>1000	Lisboa	2019	HR Director	Human resources	Degree	31–40	M	6 m
I10	Manufacture of electrical equipment	>1000	Porto	1948	Environment, Health and Safety Chief	Human resources	Degree	31–40	F	13 y 7 m
I11	Trade, maintenance and repair of motor vehicles and motorcycles	<1000	Porto/Lisboa/Aveiro	1946	HR Business Partner	Human resources	High School	up to 30	F	5 y 3 m
I12	Manufacture of other non-metallic mineral products	<500	Aveiro	1964	HR Specialist	Sociology	Master	up to 30	F	2 y 10 m
I13	Manufacture of rubber and plastic products	<250	Porto	2006	Developing manager	Environmental management	Degree	41–50	F	1 y 9 m
I14	Financial services activities, except insurance and pension funds	<250	Porto	2008	People and Culture manager	Psychology	Degree	41–50	F	9 y 4 m
I15	Wholesale trade (including agents), except motor vehicles and motorcycles	>1000	Setúbal	1953	HR Director	Human resources	Master	51–60	M	1 y 5 m

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