

BEST PRACTISES IN ENVIRONMENTAL MANAGEMENT AMONG THE POLISH PUBLIC ADMINISTRATION BODIES PARTICIPATING IN THE EMAS SCHEME

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Purpose: The purpose of this paper is to present best practices in environmental management for offices, consistent with the sectoral reference document, implemented in the Polish public administration bodies participating in the EMAS scheme.

Design/methodology/approach: The assumed research method was based on the analysis of secondary sources in form of environmental statements. The selection of sample was targeted and the research involved a complete analysis among 19 organisations conducting business activity identified with the NACE code 84, for which sectoral reference document introduced by the Commission Decision (EU) 2019/61 of 19 December 2018 is applicable. Additionally, each organisation runs office activities. The described analysis allowed to identify most frequently used practices oriented on reducing environmental impact of office operations.

Findings: Most frequent practices identified among the research participants include printing on both sides, printing only necessary documents, electronic document flow, turning off redundant equipment and light, monitoring and reporting failures of water supply system, waste sorting and rational planning of commuting and business trips. Practices listed above can be implemented in organisations with different profile of activity, and also in households.

Research limitations/implications: The described research was limited to a certain extent, because some organisations had not indicated environmental management practices in their reports, or listed only part of the implemented actions. Further research might focus on practices used in public administration bodies, e.g. in the area of mobility or sustainable energy and climate policy.

Practical implications: The key input of the described research are examples of environmental management practices that could be implemented in organisations with different profile of activity and also in households.

Social implications: This study presents examples of activities important for the fulfilment of the EU sustainability goals, mainly focused on the improvement of overall quality of life.

Originality/value: The outcomes of the study can supplement previous research concerning the EMAS scheme with examples of specific solutions implemented in public administration bodies (and possible to implement in most organisations) in order to reduce the negative environmental impact.

Keywords: EMAS scheme, sustainability, sectoral reference documents, public administration.

Category of the paper: Research paper.

1. Introduction

Sustainability is a major goal of the recent EU policy. It basically refers to continuous improvement of the quality of life and well-being of the present and future generations, which is quite difficult to achieve considering the rapid climate changes and growing demand for energy and resources. In order to face the challenges in this area, the EU has taken a series of initiatives, including the Action Plan for sustainable consumption, production and industry of 16 July 2008 (COM(2008) 397 final). It underlines the significance of the shift to more sustainable consumption and production models, as well as the importance of a certain instrument (EMAS eco-management and audit scheme) that enterprises could apply in order to optimise their production processes. The EMAS scheme, mainly focused on supporting different organisations in the improvement of environmental performance (not only in the area of production processes), is said to be one of the most transparent environmental management systems (COM(2008) 397 final). In order to achieve satisfactory results, environmental initiatives must be taken in different sectors. The EMAS Regulation No. 1221/2009 of 25 November 2009 introduced a concept of sectoral reference documents, specifying best environmental practices that could be followed by organisations operating in different sectors in order to reduce their negative environmental impact. The key sectors for which those documents are needed have been determined considering, among others, higher participation in the EMAS scheme within a given sector, and the potential for improvement of environmental protection activity within the value chain of a given sector. Public administration has been listed among the sectors whose participation in environmental protection activities was particularly important (2011/C 358/02).

This study is an attempt to supplement the knowledge concerning particular actions implemented by organisations participating in the EMAS scheme (public administration sector in this case) in order to improve their environmental performance. Supplementing this knowledge is important in the context of fulfilment of the EU sustainability goals and presenting specific solutions that could be implemented in organisations from different sectors, to improve their performance in various areas (e.g. energy efficiency, water consumption, waste management and use of materials).

2. Best practices in environmental management to be implemented in the public administration sector

As it has already been mentioned, EMAS Regulation No. 1221/2009 obliged European Commission to draft sectoral reference documents for various branches of industry. Public administration is among the key sectors for environmental protection initiatives. Best practices in environmental management proposed for that sector include specific actions that could be implemented to improve office management systems, energy efficiency, mobility, resources management, air quality, land usage as well as water supply and sewage management. Additionally, environmental performance indicators, benchmarks of excellence and rating systems identifying environmental performance levels have been proposed. Organisations already participating or preparing to register in the EMAS scheme are obliged to follow valid reference documents in the development and implementation of their own environmental management systems, and also to evaluate their environmental performance (respective results are presented in an environmental statement). However, it needs to be mentioned that organisations are obliged to follow only those practices and indexes that are relevant for their business activity and identified significant environmental aspects (Commission Decision (EU) 2019/61..., 2018).

Environmental practices listed in the sectoral reference document for the public administration sector encompass several areas. They include best practices in environmental management related to environmentally-friendly office operations. They are addressed to all public administration bodies dealing with office work. In this area, organisations should focus on management and reduction of energy and water consumption, management and reduction of the volume of waste, reducing paper and office supplies consumption, minimising the environmental impact of commuting, business trips, canteen, cafés and reducing the environmental impact of meetings and events. As far as management and reduction of energy and water is concerned, regular collection or continuous monitoring of consumption data is recommended, as well as analysing data, setting goals, determining reference values to evaluate actual consumption, and also developing a strategy and action plan to improve energy characteristics of particular office buildings or reduce water consumption. Examples of specific solutions that could be implemented in this area by public administration bodies include: installing energy-efficient equipment, introducing proper energy management systems, energy efficiency training for key staff responsible for building and energy management, involvement of all employees in activities aimed at reducing energy consumption, e.g. turning off lights or proper adjustment of indoor temperature, installing and regular maintenance of water-efficient faucets and reduction valves, installing rainwater collection systems.

As far as management and reduction of waste is concerned, organisations should focus on the implementation of advanced office waste management patterns, based on preventing, sorting and monitoring waste production. Specific practices that could be adopted in this area include departing from paper-based procedures and archiving, ensuring sustainability and possibility to reuse office furniture and equipment, encouraging employees to use reusable dishes and easy access to separated waste collection bins.

In the field of reduction of paper and office supplies consumption, the best environmental management practice for public administration bodies is the implementation and promotion of proper internal procedures (e.g. electronic document flow, printing on both sides) and switching to green public procurement patterns, in order to stimulate making more environmentally-friendly choices.

The recommended solutions in the field of commuting and business trips include encouraging employees to follow more environmentally-friendly behaviour patterns, drafting business trip schedules, reducing the scale or effective management of commuting by car, allowing employees to work in a way that reduces the need to commute (e.g. remote work, videoconferencing).

As far as minimising the environmental impact of canteens, cafés, meetings and events, best practices include implementing sustainable canteen/café/event management system and following environmental criteria when choosing meals or meeting venue. In this area, EMAS system has also been referred to as a criterion for hotel or service provider selection (Commission Decision (EU) 2019/61..., 2018).

As it has already been mentioned, the purpose of a sectoral reference document is to provide support to organisations seeking improvement of their environmental performance, by indicating practical solutions and technical guidelines, possible to adopt within the organisation. Although that document is primarily addressed to organisations already participating in the EMAS scheme or intend to register in the scheme, it can serve as a source of inspiration or practical solutions for public administration bodies that do not participate in the EMAS scheme.

3. Review of previous research concerning the EMAS scheme

The previous research concerning the EMAS scheme mainly focused on determining the motivation, problems and benefits related to the process of implementation of the EMAS system. The most frequently cited benefits include environmental effects. These were mostly related with reorganisation and systematisation of previous activities in the environmental protection field (Freimann, Schwaderlapp, 1996; Hillary, 1998; Bohne, 2000; Steger, 2000; Umweltbundesamt, 2000; Kossler et al., 2002; Morrow, Rondinelli, 2002; Hyršlova, Hajek,

2005, 2006; Abeliotis, 2006; Ministerio De Medio Ambiente, 2006; Nycz-Wróbel, 2016); reducing the negative environmental impact, mainly as a result of the reduction in produced waste as well as smaller energy and resources consumption (Bültman, Wätzold, 2000; Schucht, 2000; Umweltbundesamt, 2000; Braun, Grotz, 2002; Wenk, 2004; Hyršlova, Hajek, 2006; Vernon et al., 2009; Nycz-Wróbel, 2016), and also improvement of environmental performance (Hillary, 1998; Morrow, Rondinelli, 2002; Hillary, 2004; Daddi et al., 2011; Merli et al., 2014; Nycz-Wróbel, 2016). Among specific solutions adopted as a result of the implementation of the EMAS scheme were technical improvements within the facilities and installations owned by the company, implementing new or optimising current technological processes, replacing problematic materials and improvement of product environmental efficiency. This type of solutions has been adopted in French and German enterprises (Bültmann, Wätzold 2000; Schucht, 2000). Certain studies present specific solutions adopted in Polish power engineering and manufacturing enterprises in order to reduce emission of airborne contaminants. These include the use of modern low-emission technologies or improvement of previous technologies, modernisation of facilities and installations, monitoring and measuring level of emissions, employing flue gas treatment systems, containment of processes and improvement of transport operations (Nycz-Wróbel, 2021; 2021a). Beside that, the review of the previous research concerning the EMAS scheme has shown particular activities adopted in Polish enterprises in order to improve energy efficiency. Among them were: replacement or modernisation of systems and devices, improvement of manufacturing processes, installing modern lighting systems, monitoring consumption of energy utilities (with the introduction of additional measurement indicators in this field), implementing an energy management system, energy audits and raising awareness of employees and customers (Nycz-Wróbel, 2020). As far as the public administration sector is concerned, the research conducted in the United Kingdom, Germany and Italy, as well as other studies in the EU countries and Poland, focused mainly on the EMAS scheme implementation and seeking solutions to facilitate maintenance and effective use of that system in public administration bodies (Jungwirth, 2011; Petrosillo et al., 2012; Matuszak-Flejszman, 2016; Hajduk-Stelmachowicz, 2018). Other available studies present the motivation, barriers and benefits of the EMAS scheme implementation, among others, in the public administration sector. However, they do not identify specific solutions adopted in order to improve the environmental performance of described organisations (Vernon et al., 2009). A research conducted among Italian public administration bodies concerned the reasons to withdraw from the system, as well as possible measures that could encourage participants to return to the EMAS scheme (Merli et al., 2017).

The review of the published studies has shown that the knowledge of specific practices and solutions adopted in the public administration bodies in order to improve their environmental performance, could be supplemented. This study is an attempt to supplement that knowledge, and described outcomes might be significant for the identification of solutions that could be adopted both in the public administration bodies, and in the private business sector.

4. Aim and method

The purpose of this paper is to present best practices in environmental management for offices, consistent with the sectoral reference document, implemented in the Polish public administration bodies participating in the EMAS scheme.

The theoretical part of the paper presents the concept of sectoral reference documents, as well as best environmental practices listed therein, that could be adopted in the public administration sector to reduce the environmental impact of office operations. Public administration sector has been described as one of the key sectors involved in the environmental protection activity. Additionally, the results of previous desk-research analysis regarding organisations participating in the EMAS system have been presented, in order to indicate information that needs to be supplemented, concerning particular solutions implemented by the analysed organisations in order to improve their environmental performance.

The empirical part contains the results of individual research conducted among the Polish public administration bodies participating in the EMAS scheme. The grounds for the assumed research method was the analysis of secondary sources in form of environmental statements. These are obligatory reports submitted by organisations participating in the EMAS scheme, that must be drawn up, published and updated on a regular basis. Additionally, public administration bodies are obliged to include sectoral reference documents (if possible) in their environmental statements when assessing the effects of their environmental activities, which allows us to find specific examples of environmental practices adopted in those organisations.

The analysis of environmental statements has already been used as the basic research tool, among others in the study on the effect of EMAS implementation on the improvement of environmental performance (Daddi et al., 2011; Matuszak-Flejszman, 2019; Heras-Saizarbitoria, 2020; Nycz-Wróbel, 2020).

The selection of sample was targeted and the research involved a complete analysis among 19 organisations conducting business activity identified with the NACE code 84, in which sectoral reference document introduced by the Commission Decision (EU) 2019/61 of 19 December 2018 is applicable. Additionally, each organisation runs office activities. It is worth mentioning that two of the analysed organisations reported in their environmental statements that they had adopted practices consistent with a sectoral reference document, but these practices were not actually specified.

Environmental statements were downloaded from the official Polish EMAS website, as per the register dated 08 April 2024. The study was conducted from 08 April 2024 to 30 April 2024. An in-depth analysis of environmental statements allowed to determine the best environmental management practices presented by individual organisations.

Next, these practices were arranged based on the sectoral reference document, and divided into 7 groups: management and reduction of energy consumption, management and reduction of water consumption, management and reduction of waste production, reducing paper and office supplies consumption, reducing environmental impact of commuting and business trips, reducing environmental impact of canteens and cafés and reducing environmental impact of meetings and business events. The results have been presented in tables.

5. Research outcomes

Table 1 presents a summary of best practices in environmental management for offices, consistent with the sectoral reference document, implemented in the Polish public administration bodies participating in the EMAS scheme.

Table 1.

Best environmental management practices in office operations adopted by the Polish public administration bodies

Practice	Number of organisations
Reducing paper and office supplies consumption	15
Management and reduction of energy consumption	13
Management and reduction of water consumption	13
Management and reduction of waste production	13
Reducing environmental impact of commuting and business trips	13
Reducing environmental impact of meetings and business events	3
Reducing environmental impact of canteens and cafés	0

Source: individual research based on the analysis of environmental statements.

Most of the analysed organisation from the Polish public administration sector adopted environmental practices oriented on reducing paper and office supplies consumption (15). Other frequently used practices also included activities in the field of reduction of energy and water consumption, waste production, as well as reduction of negative environmental impact of commuting and business trips. These practices were indicated in environmental statements of 13 analysed organisations. The least frequent activities reported by the analysed Polish public administration bodies were aimed at reducing environmental impact of business meetings and events (3). None of the analysed organisations reported activities leading to reduce the environmental impact of canteens and cafés.

Table 2 presents the activities related to reducing paper and office supplies consumption.

Table 2.

Best environmental management practices in reducing paper and office supplies consumption in Polish public administration bodies

Practice	Number of organisations
Printing on both sides	13
Reducing the amount of printouts, printing only if necessary	12
Electronic document flow	10
Reusing paper written on one side (e.g. as a draft or internal printed document)	8
If possible, disseminating information and documents to colleagues via e-mail	5
Common high efficiency printers and quick scanners (so-called "central printing system")	5
Printing final version of documents upon manager's approval of electronic document contents	3
Planning optimum content and print layout (in order to reduce the number of printed pages)	3
Using environmentally-friendly certified recycled paper	3
Electronic drafting of letters and internal correspondence	1
Checking if document is finished before printing	1
Following the "Green Public Procurement" principle when planning purchase of products and services	1
Preparing single copy of proposed solutions (printing the legally required number of copies only after final approval of the manager)	1
Gradual shift from paper to digital documentation	1
Continuous monitoring of paper purchase and consumption	1
Taking only necessary amount of paper towels from the dispenser	1

Source: individual research based on the analysis of environmental statements.

The most frequent practices include printing on both sides (13), reducing the number of printouts (12) and implementing electronic document flow (10). As far as the first of the listed practices is concerned, some organisations reported that double-sided printing is used whenever possible, two organisations used default setting to print on both sides, while four other organisations claimed that it was an obligatory rule within the whole unit. When it comes to minimising the number of printouts, the analysed organisations checked if a given document had an electronic version (in that case, printing was not necessary). They also gave up printing reports, bulletins and meeting documents; while one of the research participants reported reduction of colour printouts, and another claimed that they used only grey scale printouts. The activities related to the implementation of electronic document flow included introduction of an electronic document management system, using the e-PUAP messaging system, placement of internal regulations, contracts agreements, comments to legislative acts, attorney documents, etc. on a common server, and also using electronic signatures. Most frequent practices to reduce paper and office supplies consumption include reuse of paper printed on one side (8), dissemination of documents and information to employees via e-mail whenever possible (5) and replacing individual printers with common high-efficiency devices and quick scanners, optimally placed within the organisation building (5). As for the latter practice, one of the analysed organisations reported that their HR and accounting departments were allowed to use individual printers due to the confidential character of processed documentation.

Table 3 presents specific activities in the energy management area.

Table 3.

Best environmental management practices in managing and reducing energy consumption in Polish public administration bodies

Practice	Number of organisations
Switching off redundant office equipment and air conditioning units, without leaving them in standby mode	10
Turning off light while leaving the room and in rooms that are not in use for a longer time	7
Avoiding to use artificial lighting in bright and sunlit rooms	5
Turning off light when living toilet or kitchen	5
Rational use of coffee machine or kettle	3
Reporting drafty windows and doors (to prevent heat loss)	2
Reducing heating while airing rooms / closing doors and windows in air-conditioned rooms	2
Installing automatic screen savers	2
Adjusting cooling and heating efficiency in office rooms	2
Automatic light switches in toilets	1
Replacement of lighting and electric/electronic equipment	1
Replacement of individual printers with large high-efficiency printers	1
Continuous monitoring of energy consumption (e.g. by comparing invoice amounts)	1

Source: individual research based on the analysis of environmental statements.

The largest group of the analysed organisations adopted the practice consisted in turning off redundant office equipment and air conditioning units (10). Other frequent practices include turning off lights in unoccupied rooms (7), toilets and kitchen (5), as well as the use of natural light in bright rooms (5).

Table 4 presents practices related to water consumption management.

Table 4.

Best environmental management practices to reduce water consumption in Polish public administration bodies

Practice	Number of organisations
Encouraging employees to reduce water consumption	8
Monitoring and reporting water supply system failures	4
Turning off toilet and kitchen faucets completely	3
Boiling as much water as needed	3
Efficient use of dishwasher	2
Checking if faucet is turned off completely	1
Continuous monitoring of water consumption (e.g. by comparing invoice amounts)	1

Source: individual research based on the analysis of environmental statements.

The largest number of analysed organisations reported activities consisted in encouraging employees to reduce water consumption (8). Two out of eight organisations adopting that practice, used special labelling in the toilet and kitchen to remind their employees to save water: "It's great that you save water!" and "Save water". Another frequent activities in the field of reduction of water consumption include monitoring and reporting water supply system failures (4), tight closing of faucets (3) and boiling as much water as needed (3).

Table 5 presents good practices in the waste management area.

Table 5.

Best environmental management practices in managing and reducing waste production in Polish public administration bodies

Practice	Number of organisations
Collecting municipal waste in properly labelled separate bins	12
Waste removal by authorised third-party companies	7
Ensuring proper access to separated waste collection bins	5
Folding cartons and compressing plastic packaging materials before placement in a bin	4
Avoiding the use of disposable plastic packaging, bags and cups	4
Proper care and maintenance of equipment provided by the company	3
Including a clause concerning required disposal of waste produced as a result of a service in contracts with third party providers	3
Implementing an electronic document management system	2
Avoiding to place plastic, paper and glass waste in office bins	1
Placing clean food packaging in recyclable waste bins	1
Reusing office furniture and equipment	1
Quantity and quality check of produced waste in accordance with the waste act requirements	1
Systematic review of waste storage areas	1
Continuous monitoring of waste production (by analysing waste removal receipts)	1
Continuous monitoring of quantity of purchased materials (to compare consumption)	1
Using environmentally-friendly cleaning agents	1
Training of employees in waste sorting principles	1

Source: individual research based on the analysis of environmental statements.

Most analysed organisations indicated separation of waste in properly labelled bins (12). Practices reported in this area also include waste removal by authorised companies (7), ensuring proper access to waste collection bins for employees and customers (5) and compressing packaging materials before placement in a bin to save space (4). Other reported activities include extending the life-cycle of devices and equipment. These practices were reported by 3 organisations and consisted in using professional cleaning, repair and maintenance service (e.g. car upholstery cleaning, repair of electronic equipment, inspection and maintenance of air conditioning units). One organisation developed a special procedure to enable re-use of furniture and office equipment. It assumed keeping an on-line list of redundant or used equipment (devices, furniture, office supplies) offered for purchase at a lower price to individuals and employees.

Beside that, the analysed organisations adopted practices aimed at reducing negative impact of commuting and business trips (Table 6).

Table 6.

Best environmental management practices to minimise environmental impact of commuting and business trips in the Polish public administration bodies

Practice	Number of organisations
Rational planning of business trips and commuting	8
Replacement of old cars with new, more environmentally-friendly vehicles	6
Commuting by bus or train, motorcycle, bicycle and other environmentally-friendly means of transport	4
Providing a secure bicycle parking area near the company building	3
Using the "eco-driving" principles	2

Cont. table 6.

Videoconferencing	2
Using an available integrated transport system, buffer parking or Park&Ride facilities	1
Involvement of management and EMAS team in promoting environmentally-friendly commuting during company meetings	1
Continuous monitoring of fuel consumption and mileage to check improvement	1
Regular checks of technical efficiency of company cars	1

Source: individual research based on the analysis of environmental statements.

Most organisations adopted the practice of rational planning of business trips and commuting (8). In order to achieve that, business trips were combined, individual rides were limited, business trips were planned to handle several issues in a given area, weekly work plan was introduced to plan business trips in advance (e.g. by combining trips to handle several issues), departures were scheduled in certain hours to avoid traffic jams, public transport (including railway) and carpooling were used, if possible. Another practices adopted to reduce the negative impact of commuting and business trips (in six organisations) include switching to more environmentally-friendly vehicles (Euro-6, hybrid) and commuting by public transport (4). In order to encourage employees to commute by bicycle, safe bicycle parking spaces were provided at the organisation's car park (3).

Polish public administration bodies also performed activities aimed at reducing negative environmental impact of business meetings and events (Table 7).

Table 7.

Best environmental management practices to minimise environmental impact of official meetings and business events in the Polish public administration bodies

Practice	Number of organisations
Withdrawal from the use of disposable tableware	2
Reducing the amount of gifts and content of conference materials	2
Switching to electronic training materials	1
Printing on recycled paper	1
Videoconferencing	1
Ordering water in reusable bottles	1
Taking into account environmental criteria while choosing service providers and venue for a meeting, conference or training	1

Source: individual research based on the analysis of environmental statements.

Practices related to reducing environmental impact of business meetings and events were listed in only three environmental statements. These activities include withdrawal from the use of disposable tableware (2) and limiting the content of conference materials (only leaflets and badges) (2). Conference materials were also provided in a downloadable electronic form. Another practice that is worth mentioning, is considering environmental criteria while choosing the venue or organiser of an event (1). In this aspect, the selection of strategic places within the region has been emphasised (to ensure easy access by public transport), as well as the selection of service suppliers that do not use disposable tableware.

6. Discussion

Public administration has been listed by the European Commission among the key sectors for the implementation of practices leading to the reduction of the negative environmental impact. It is also one of the sectors for which sectoral reference documents have been issued. They serve as a basis for organisations to develop their own set of environmental practices, adopted to improve environmental performance. This study focused on Polish public administration bodies participating in the EMAS scheme and identified specific actions taken to increase sustainability of office operations. It can be concluded that the analysed organisations were mainly oriented on five out of seven practices proposed in the sectoral reference document. These were: reduction of paper and office supplies consumption, management and reduction of energy and water consumption, management and reduction of waste production, and reducing environmental impact of commuting and business trips. Certain activities were frequently adopted in each of the listed areas. These include: print-on-both-sides principle, printing only necessary documents, electronic document flow, reuse of paper printed on one side (paper and office supplies), turning off redundant office equipment, air conditioning units and light (energy), encouraging employees to save water, monitor and report any failures within the water supply system, closing water faucets (water), proper sorting and disposal of waste (waste), rational planning of commuting and business trips, and switching to a more environmentally-friendly car (commuting and business trips). Comparing the outcomes of this study with the previous research is not easy due to the fact that the previous study (on specific activities implemented in organisations in order to improve their environmental performance) referred to enterprises, while this analysis concerns public administration bodies. However, that comparison indicates certain differences in the type of activities most frequently adopted in both groups of analysed organisations, which is related to the character of their operations. In enterprises, these were often quite expensive activities, that involved implementation of new technology or environmental improvement of existing processes, facilities and installations. In the public administration sector, most frequently adopted practices include initiatives adopted at the employee level, quite easy to incorporate into regular duties. It is worth noting that those simple practices can, or even should inspire enterprises and be adopted as a supplementary solution, beside more expensive improvements (considering the fact that all employees of an organisation should contribute to reducing the negative environmental impact). Improvement of energy efficiency could serve as an example. As it has been found in the previous research, one of the most frequent solutions adopted in enterprises (beside the costly modernisation of processes, installations and facilities, or time-consuming implementation of energy management systems), was raising awareness among employees and customers. In this field companies could adopt environmental practices implemented in the public administration sector, e.g. turning off redundant equipment, turning off light in unoccupied areas, or rational temperature adjustment.

When analysing the practices described herein, it should be emphasised that these actions could be adopted not only in the public administration sector, and not only to reduce the environmental impact of office operations. The majority of the presented practices can be applied, as it has already been mentioned, in enterprises seeking inspiration and ideas for activities that could help them improve their environmental performance e.g. in the fields of energy and water consumption, and waste management, as well as in any organisation dealing with office work. Even if a given organisation is more focused on one or two environmental aspects (e.g. energy and waste), they can additionally implement environmental practices in other areas, e.g. related with more rational use of office supplies and paper, or in the employees' commuting area.

These practices can be very useful for all organisations participating in the EMAS scheme (not only in Poland), that are obliged to provide environmental reports, indicating progress in six areas specified in the EMAS Regulation: energy efficiency, effective use of materials, water, waste, biodiversity and emissions (practices described herein apply to five out of six listed areas).

In the context of environmental protection, scalability is crucial, that could be achieved by systemic action and initiative of different groups of organisations, not only enterprises or public administration bodies. Many practices presented herein could be adopted in households, that have a significant role in the context of environmental protection activities.

7. Conclusions

The purpose of this paper was to present best practices in environmental management for offices, consistent with the sectoral reference document, implemented in the Polish public administration bodies participating in the EMAS scheme. This study allowed to identify certain practices most frequently used among the analysed organisations, aimed at reducing consumption of paper and office materials, energy and water, waste production, as well as environmental impact of commuting and business trips. The key input of the described research are examples of specific activities that could inspire or be readily implemented in different public administration bodies, companies with different profile of activity and households. It is particularly important for the fulfilment of one of the major goals in the EU sustainability policy. This study supplements previous research conducted among the organisations participating in the EMAS scheme.

The described research does not provide sufficient information to fill the gap in the knowledge concerning environmental practices implemented in the public administration bodies. Further research might focus on other practices mentioned in the sectoral reference document, concerning e.g. mobility or policy for sustainable energy and climate.

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