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Cooperative Approaches in Waste Management

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Abstract

Discussions on the effectiveness of different approaches to waste management are often disputed. On the one hand, there are those that claim that environmental protection regulations are beneficial to the economy and encourage technological innovation, more efficient processing and the use of resource input information that leads to less energy consumption and better products in the long run. On the other hand, there are those arguing that compliance costs have led to an unfavourable market position and have undermined innovation. Activities related to helping companies contribute to the economy through the effective use of resources include raising awareness of environmental and energy-related issues, law implementation support, assessment of their environmental and energy efficiency, as well as initiatives to improve the skills and qualifications of their workforce. This paper presents the results of empirical research into the awareness and attitudes of the public concerned with a collaborative approach in waste management. Qualitative and quantitative methods of collecting and processing the research material were used. The results of the research confirm significant differences among the respondents of the target groups, given the level of awareness and attitudes to the collaborative approach to waste management.

Keywords: awareness, concerned public, waste management

Track: Governance

Word count: 5.692

1. Introduction

Public information and participation in the decision-making process during the assessment of environmental impact studies with the aim of establishing a waste management system represent a public sphere on the social level as a starting point for understanding how individual projects contribute to the creation of social norms and values.

By signing the Treaty of Accession of the Republic of Croatia to the European Union, the Republic of Croatia has undertaken to meet the targets for certain areas such as waste management and reduction of greenhouse gas emissions. According to the Treaty of Accession of the Republic of Croatia to the European Union, Chapter III. Waste Management, p.148, all existing landfills in Croatia must comply with the requirements of the Council Directive (1999) by 31 December 2018, except for the requirements set out in Annex I, point 1 of this Directive. Croatia will ensure a gradual reduction of waste deposited in existing non-compliant landfills: by 31 December 2013: 1,710,000 tonnes; by 31 December 2014: 1,410,000 tonnes; by 31 December 2015: 1,210,000 tonnes; by 31 December 2016: 1,010,000 tonnes; by 31 December 2017: 800,000 tonnes. By 31 December each year, starting with the year of accession, Croatia will submit to the Commission a report on the gradual implementation of the Directive and the fulfilment of the target milestones.

Within the framework of Croatia's accession negotiations with the European Union, the ratification of the Kyoto Protocol was one of the key conditions in the "Environment" chapter. Croatia signed the Kyoto Protocol in 1999 and ratified it in April 2007. By ratifying the Protocol, Croatia has undertaken to reduce greenhouse gas emissions in the period from 2008 to 2012 by 5%, compared to the emissions in the base year 1990.

In addition to the Treaty of Accession, another document also refers to the Republic of Croatia and is known as the Europe 2020 – an EU growth strategy in the next decade for a smart, sustainable and inclusive economy with five headline targets. It lists and elaborates the European targets until 2020 with regard to climate change / energy: reduction of greenhouse gas emissions by 20%; increase in the share of renewable energy sources by 20% in direct energy consumption; improvement of energy efficiency by 20%. Each country must develop, through its own Plan and Program, the activities for participating in the achievement of the European targets. Anyone who can in any way contribute to the achievement of these targets should participate in the preparation and implementation of such a plan and program.

Particular responsibility lies with the public sector. We live in a time when the media are ubiquitous. Today's journalism dominates in society, it reflects the actions and thoughts of the social environment. The increased role and power of journalistic media combined with modern communication methods have a significant impact on today's democracy. In line with new technologies and changes in society, the next generations of government employees will need adequate education not only in managerial skills, but also with regard to the media, public relations and other forms of external communication.

Public administration is based on the management in the public sphere of society which is qualitatively different from the similar role in the private sector. One of the characteristics that distinguishes the public and private sectors is the role and power that journalistic media, i.e. external communication, have as a management element. For business executives, co-operation with the public and the media and participation in external communication is a matter of *choice*. For public administration it is a *requirement*. Freedom of speech and freedom of information laws force public administration employees to be accountable to the public and the media. Unlike their business and non-profit counterparts, they have to be transparent. The complexity of public relations and the interconnectedness of all participants in contemporary public information processes suggest that changes are necessary. Redefinition of the relationship between the administration and the public becomes more and more important and almost inevitable (Lee, 2008). Liu, Horsley, and Levenshus (2010) in their study also identify differences and similarities in communication practices between the public and private sectors – the results show differences between the two groups in the budget, political influences, frequency of communication, public pressure, interactions with other organisations, frequency of media coverage, assessment of media coverage and the influence of legal frameworks in connection with communication practices. There are no significant differences in the diversity of the public, opportunities for professional development, participation in organisational leadership, or support for communication management between the two groups.

Discussions on the effectiveness of different approaches to waste management are often disputed, and ambiguous messages are sent to the public conveying opposing views and different opinions of experts on how to best solve certain issues. On the one hand there are those that claim that environmental protection regulations are beneficial to the economy and encourage technological innovation, more efficient processing and use of resource input information that lead to less energy consumption and better products in the long run. On the other hand, there are those arguing that compliance costs have led to an unfavourable market position and have undermined innovation. Activities related to helping companies to

contribute to the economy through effective use of resources include raising awareness of environmental and energy related issues, law implementation support, assessment of their environmental and energy efficiency, as well as initiatives to improve skills and qualifications of their workforce. Public information and participation in environmental protection for the public, economic and civil sectors are becoming increasingly important in project implementation and final decision making, and their success depends on communication in the public sphere.

The public sphere was first conceptualized by Jürgen Habermas. Habermas provides a theoretical basis for a form of planning that emphasizes the widespread public participation, sharing information with the public, reaching consensus through public dialogue instead of displaying power, avoiding empowering experts and bureaucrats, and substituting patterns of a technical expert with those of a thought planner. In this regard, the legitimacy of democracy depends not only on the constituent processes of introducing legislation, but also on the “discursive quality of the complete process of taking into consideration what has led to such results”, according to White (Bolton, 2005).

Communicative action is an individual action created in order to promote common understanding in the group, and to promote cooperation, as opposed to “strategic action”, created just to achieve personal goals. Some planning theorists believe that the desire to plan means to encourage communicative action to enable the production of social capital. Habermas sets civil society in contrast to systemic integrated areas of the economy and the country that have over time differentiated according to the media of money and power. This is where Habermas warns that the privileged appropriation of socially produced wealth in a capitalist civil society with the legally institutionalized mechanisms of labour and capital markets is disguised and objectified. System integration and social integration in the political public are exclusionarily confronted. Autonomy of life in the political public opposes the systemic perspective of the state apparatus. On the one hand, there is public opinion as the general will, i.e., the pluralistic expression of the general interest and social consensus. On the other hand, this same consensus serves to guarantee the legitimacy of (mass loyalty to) the political system (Vreg & Mlač, 1991).

Agee, Ault, Cameron, and Wilcox (2003) particularly emphasise the increasing role of environmental associations in the world, and their impact on the management of public relations, citing the example of Greenpeace, whose members symbolically opposed nuclear testing in a small boat 30 years ago. One of the world's largest non-governmental organisations has managed to create a brand with the images of activists in a rubber boat and the symbolism of *David and Goliath* in front of tankers and naval ships, and to take advantage of capitalism in creating such a large and powerful organisation that the public begins to instinctively fear it. They are independent of the state, are globally connected, and focused on fulfilling their purpose, bypassing elected parliaments (Blood, 2004)

There are few analyses of the contents of slogans such as *civic participation* or *maximum feasible participation*, as well as responses to questions such as what actually constitutes civic participation and what its relation to the social imperatives of our time is. Sherry R. Arnstein (1969) points out in her paper, “The Ladder of Civic Participation”, that civic participation is a categorical term for the power of citizens and believes that it is the redistribution of power that enables the existence of poor people, currently excluded from political and economic processes, so that they can be intentionally included sometime in the future. It is a strategy used for the poor to join in determining how to share information, how to set goals and conditions, how to allocate tax assets, how programs work, and how benefits like contracts and patronage are distributed. In short, it is the way in which they can produce significant social reform, which enables them to benefit from the benefits of a rich society.

Never in its history has environmental protection been the subject of societal concern and public interest as much as it is today. Public opinion, as opposed to individual, can have three different meanings (Kunczik & Zipfel, 1998): opinion which is shared publicly, opinion pertaining to the subject of public interest, opinion that, in the spirit of public opinion polls, is shared by the public at large (large number of individuals), but *having an opinion about something doesn't mean knowing anything about it*. According to German scientists M. Kunczik and A. Zipfel, public opinion is seen as a social process bound to specific objects, situations, historical circumstances and persons. Public opinion is created when a large number of people have the same view on a subject, being aware of the overlap of their opinions. Kunczik M. and A. Zipfel (2000) developed a structural functional model of the system of mass media, where they stated *creating the public* as one of the functions of the media.

There are a number of different approaches organisations use to relate to the public opinion. Some of them are trying to create their own atmosphere in the public opinion in an aggressive manner, while most organisations see public opinion as an extremely important area, where daily actions and activity adaptation are required. Systematic adjustment to the public and public opinion implies constantly collecting information among members of the public who are important for the organisation, and submitting the said information to the management, which ultimately makes the final decision in the organisation and manages it (Jugo, 2012).

Socially responsible behaviour of investors is a component important in the processes of environmental impact studies. Environmental approach (Cutlip, Center, & Broom, 2000) is the fundamental role the organisations have to play to adapt to changes in their environment. In order to successfully operate and survive, all organisations must: accept public responsibility as imposed by society, communicate with audiences, get integrated into the community because of which they exist in the first place. Alvin Toffler (1984) predicted that the technologically fostered information age will result in a more dynamic environment. Specific changes and forces must be identified, investigated and understood in the context of the situation and organisational environment. But at the same time, certain vague fundamental changes lead to other changes, and have consequences for all organisations.

Environmental ethics plays a special role as a means for learning about the foundation of ethical norms as a criterion of moral conduct towards the living world and ecosystems in nature (Čižarić, 2009). Environmental issues dominate the public debate and public policy, and it will be so in the future. Faith Popcorn (1991) calls this movement S.O.S. (Save Our Society) and says that these are the issues of the generation that will soon take power. Due to the problems of climate change and the destruction of the protective ozone layer in the atmosphere, international action is required. Opinion polls show that people believe the destruction of the environment is the most serious misdeed that a corporation can commit. It is evident from a number of examples how environmental movement with increasing speed and power influences the development of the economy and the decision-making process. There is a critical difference between going through the formal ritual of participation and having real power needed to affect the outcome of the process. This difference is brilliantly summed up in a now famous poster made in the last century, in 1968, by French students to explain the uprising of students and workers, which bore the inscription: *I participate, you participate, he participates, we participate, you participate, **they decide (profit)*** (Arnstein, 1969). The poster highlights the fundamental point that participation without redistribution of power is an empty and frustrating process for the powerless. This allows the government to claim that all parties are taken into account but allows only some of those parties to benefit. The contribution of this scientific research is the confirmation and connection of the application of the model.

The ladder pits the weak against the strong in order to highlight the fundamental division between them, while in reality these are not homogeneous blocks. Each group includes a number of different views, significant discords, competitive interests and fragmented subgroups. According to Arnstein (1969), justification for the use of such a simplified abstraction is that in most cases the public does not perceive the government as a *monolithic system*, while the government sees people as a sea of *some people* with a few differences between them. The delegated authority and civil control that represent the seventh and eighth crossbars of public participation are full civil power.

Negotiations between citizens and public officials can also lead to the realisation of the dominant power of citizens in the decision-making process during a specific plan or program, which is a strong degree of civil power. Political city committees or agency delegates, in which citizens have the majority of seats and genuine specified powers, are typical examples. At this level, the ladder climbed to the point where citizens hold significant cards to ensure the accountability of the program for them.

To resolve the differences, the government should begin a process of negotiation, and not respond to the pressure from the other side. Requirements for full civil power, community supervision and control of the neighbourhood are on the rise. Although no one in the nation has absolute control, it is very important not to confuse the rhetoric with intention. People just look for that degree of power (or control) which guarantees that participants or residents can govern a specific program or institution, be fully in charge of political and managerial aspects, and that they can negotiate the terms under which the *underdogs* can change them. Local corporations without intermediaries between them and sources of funds is the model they are committed to the most. A small number of such experimental corporations already produce goods and/or social services. Several others are under development, while new models for control will undoubtedly emerge as models in which the poor insist on a greater degree of power over their lives.

The problem of a lack of public participation and information is best reflected by public relations theorists Grunig and Hunt (1984), based on the model of communication with the public and their involvement in social processes. Engaging the public in a wide range and at different stages of policy development, using deliberative methods and procedures, is now an adopted and legitimate practice in several policy areas (Cass, 2006). Deliberation is described as a process in which a wide range of participants learn, discuss and jointly find solutions. In order to address a global problem, such as climate change and waste management, a clear and global public information and participation is necessary at all levels, otherwise the public will remain confused and create the impression that this problem is solved elsewhere without them.

Climate change and waste management are likely to be a permanent problem today which is constantly creating new problems that need to be solved because they pose certain challenges to management, but also create other doubts. They refer to the harmonisation of wishes, ambitions and resources of many independent actors, the lack of well-structured or institutionalized policy domains, uncertainty in the nature and extent of climate change and the effectiveness of possible solutions. Climate change mitigation and adaptation affects individuals and organisations in all areas of activity, which means that the problem cannot be reduced to a unique set of defined activities.

Lazarus (2009) addresses some of the problems in management in his work on the difficulties in the successful implementation of environmental protection regulations in the United States. He explains that the results of the climate change legislation are noticed only after a certain time, especially because of the short-term costs of benefits that will only be realised after several decades. Lazarus explains these issues in more detail by summarising the science on

climate change, the impact on human nature and the nature of legislative institutions in the United States. In the discussion on the climate change science, Lazarus describes the greenhouse effect as a worldwide phenomenon that has been generated by increasing the amount of chemicals in the atmosphere, which are then evenly distributed throughout the world. He states that “as long as the amount of greenhouse gases emitted into the atmosphere is greater than the amount that naturally decreases annually, the concentrations of greenhouse gases will increase over time.” This means that high concentrations of greenhouse gases cannot be reduced easily or quickly, and that the reduction of the emission increase rate will not be enough to reduce the total concentration. Concentrations in the atmosphere will only be reduced by a complete reduction in emissions sufficient for natural discharges to exceed the total emissions. Domestic (at the national level) greenhouse gas monitoring measures are, though necessary, clearly insufficient, especially because emissions from one country can outweigh the gains resulting from a reduction in emissions in another country.

One of the challenges of managing this situation is that, although concentrations in the atmosphere are evenly distributed, global warming unevenly affects all countries, whereby certain countries are more affected than others. Lazarus states that this makes it very difficult to achieve international co-operation and coordination to address this problem. In addition, it is unlikely that countries such as China, India and Brazil, whose greenhouse gas emission rates are growing, will agree to cease expanding their economies to reduce emissions. This means there are lower incentives for other countries to reduce their emissions when it is likely that the emissions of the fast-growing countries will exceed the benefits generated by ecologically acceptable programs of other countries.

Human nature also contributes to the particular gravity of climate change. Lazarus (2009) describes this contribution through time, space and complexity. He mentions the “unavailability heuristic” that makes it difficult for people to imagine the problem of climate change due to the lack of direct impact. This means that it is less likely that they would act to solve the problem. This is true both in the sense of time and space because activities in a certain part of the world often have consequences for another part of the world. Lazarus also states that the “unavailability heuristic” occurs when people do not sufficiently understand the technical difficulties of the problem. An example of this is the stock/flow relationship that encourages climate change. This is a situation in which the reduction of greenhouse gas emissions will cause a general decline in greenhouse gas concentrations only when total annual emissions are lower than the amount naturally coming from the atmosphere.

This is linked to the “representativeness heuristic” which means that activities that are known to affect the environment are not connected with the direct apparent effect according to experiences of most persons. This leads to the conclusion that people would not engage in harmful and unnecessary consumption if the consequences of these activities were clear, and the causal link between the activities and outcomes were not so complex.

Finally, fragmented law adoption procedures and the effect of short-term election cycles make it difficult to address long-term problems such as climate change. Lazarus also notes that the environmental law’s redistributive thrust means that there is always a chance that someone will suffer a financial loss. He further notes that such groups are likely to resist legislation by pointing out scientific uncertainty and the complexity of effects on the environment and environmental damage.

This paper presents the results of the empirical research of awareness of and attitudes to the collaborative approach in waste management of the public concerned.

2. Methods

The sample was defined with 100 entities, 53 males and 47 females. The average respondent age was 44.8 years. Materials were collected during 2017. Respondents were divided into nine subsamples (target groups) which were qualitatively defined:

ASSOCIATIONS – representatives of non-governmental environmental associations of Split-Dalmatia County, 10 respondents; *CITIES* – representatives of local government employees of the cities Kaštel, Solin and Split, 10 respondents; *WASTE MANAGEMENT COMPANIES* – representatives of companies that have a permit for carrying out waste management activities, 10 respondents; *POLITICS/MEDIA* – representatives of local political structures and the media, 10 respondents; *CITIZENS' INITIATIVES* – representatives of citizens' initiatives other than environmental, 10 respondents; *KASTEL RESIDENTS* – 15 respondents; *SOLIN RESIDENTS* – 15 respondents; *REPRESENTATIVES OF THE ECONOMY* – representatives of companies carrying out activities other than waste management, 10 respondents; *COUNTY* – representatives of Split-Dalmatia County local administration employees, 10 respondents

Three new qualitatively defined clusters (sectors) of 70 respondents were classified based on the above subsamples:

PUBLIC SECTOR – 30 respondents from target groups: *CITIES*, *POLITICS/MEDIA* and *COUNTY*.

CIVIL SECTOR – 20 respondents from target groups: *ASSOCIATIONS* and *CITIZENS' INITIATIVES*.

ECONOMIC SECTOR – 20 respondents from target groups: *WASTE MANAGEMENT COMPANIES* and *REPRESENTATIVES OF THE ECONOMY*

Quantitative processing of the entity and variable matrix is based on the obtained answers to the qualitatively defined interview question that reads:

Do you believe that the public is sufficiently informed and prepared for active participation in the establishment of a waste management system?

A problem-oriented, in-depth interview included 100 respondents divided into nine target groups and three control sectors which represent a targeted sample of the public concerned full of information and participating in the creation of attitudes of others. All respondents volunteered to participate in this research after the problem and the purpose of the research had been explained.

Following the written transcripts, the responses were numerically coded for the purpose of forming a matrix defined by the total sample of the respondents and the coded variables for further statistical processing. A descriptive analysis would determine the frequency of each applied coded variable for each question as well as their relative values.

The quantification of the qualitative empirical material and conversion into numerical form was performed for further statistical analysis. The complete statistical processing was performed with the Statistica Ver.11.00 software suite processing package (Petz, Kolesarić, & Ivanec, 2012).

3. Results and discussion

Quantitative processing of the entity and variable matrix is based on the obtained answers to the qualitatively defined interview question that reads:

Do you believe that the public is sufficiently informed and prepared for active participation in the establishment of a waste management system?

Respondents expressed their views and opinions on whether the public is sufficiently informed and prepared for active participation in the establishment of a waste management system. Respondents' responses were classified in three levels.

The first group was classified according to negative responses, and represents those entities that answered: No, the public is not sufficiently informed and prepared for active participation in the establishment of a waste management system. The impression is that the citizens of the Republic of Croatia will certainly be paying EU penalties for failing to meet the obligations and deadlines for waste management, primarily because of insufficient classification of municipal waste and landfills that have not been cleaned up, but they have no accurate information as to what they should do.

Quantitatively, these responses were coded as 0 (zero) for the upcoming statistical data processing.

The second group was classified according to affirmative responses, and represents those entities that answered: Yes, the public is sufficiently informed and prepared for active participation in the establishment of a waste management system, it has been talked of for years and it is clear to everyone that waste has to be sorted and that existing landfills need to be cleaned up or closed. Quantitatively, these responses were coded as 1 (one) for the upcoming statistical data processing.

The third group represents those entities that answered: I am not sure, I am partially informed, I do not know enough, I am not fully informed, I know something but not everything etc.

Quantitatively, these responses were coded as 2 (two) for the upcoming statistical data processing.

A descriptive analysis determined the frequency of coded responses of the entire sample, the nine target groups that were re-defined in the analysis process as three new sectors, and an analysis and statistical processing were performed for all classified subgroups.

Table 1 shows the frequency of all entities and the variable coded *differences_participation_waste management system*.

A total of 57% of respondents believe that the public is not sufficiently informed and prepared for active participation in the establishment of a waste management system.

A total of 22% of respondents believe that the public is sufficiently informed and prepared for active participation in the establishment of a waste management system.

Finally, 21% of entities have no opinion on this question because they are not certain about the correct answer, they are partially informed, they do not know enough, they are not fully informed, they know something but not everything.

Table 1: Relative and cumulative frequencies of the variable *differences_participation_waste management system*. N=100

Frequency table: *differences_participation_waste management system*
(m_pletikosić_matrica)

	Count	Cumulative - Count	Percent	Cumulative - Percent
0	57	57	57.000	57.00
1	22	79	22.000	79.00
2	21	100	21.000	100.00
Missing	0	100	0.000	100.00

Legend: 0-no; 1-yes; 2-I am not sure, I am partially informed

The frequencies of the variable *differences_participation_waste management system* by target group which are shown in Table 2 indicate that the representatives of all defined

subsamples mostly, i.e. a share of 57% of them, believe that the public is not sufficiently informed and prepared for active participation in the establishment of a waste management system. The *ECONOMY target group* fully believes that the public is sufficiently informed and prepared for active participation in the establishment of a waste management system. Most of the entities in the *CITIZENS' INITIATIVES* group are indecisive, they do not believe that they have sufficient information, are not sufficiently certain and have no knowledge of whether the public is sufficiently informed and prepared for active participation in the establishment of a waste management system.

Table 2: Frequencies of the variable *differences_participation_waste management system* by *target group*. N=100

Frequency table: *differences_participation_waste management system* by target group (m_pletikosić_matrica)

	ASSOCIATIONS	CITIZENS	WASTE MANAGEMENT COMPANIES	POLITICS/MEDIA	CITIZENS' INITIATIVES	KAŠTEL RESIDENTS	SOLIDARITY RESIDENTS	ECONOMY	COMMUNITY	TOTAL
0	6	8	5	6	3	12	9	0	8	57
1	4	0	0	3	0	3	0	10	2	22
2	0	2	5	1	7	0	6	0	0	21
Total	10	10	10	10	10	15	15	10	10	100

Legend: 0-no; 1-yes; 2-I am not sure, I am partially informed

The negative coded response for the variable *differences_participation_waste management system* by *sector group* has the highest numerical value in the *public sector* where 22 out of 30 analysed representatives believe that the public is not sufficiently informed and prepared for active participation in the establishment of a waste management system, while most of the respondents from the *economic sector* expressed the opposite view that the public is sufficiently informed and prepared for active participation in the establishment of a waste management system.

From the *civil sector*, 7 entities of the total of 15 respondents who chose the coded response two (2) stated that they were partially and incompletely informed of the presented issue. All results are shown in Table 3.

Table 3: Frequencies of the variable *differences_participation_waste management system* by

sector group. N=70				
Frequency table: <i>differences_participation_waste management system</i> by sector (m_pletikosić_matrica)				
	public	civil	economic	total
0	22	9	5	36
1	5	4	10	19
2	3	7	5	15
total	30	20	20	70

Legend: 0-no; 1-yes; 2-I am not sure, I am partially informed

4. Conclusion

This paper presents the results of the empirical research of awareness of and attitudes to the collaborative approach in waste management of the public concerned. The qualitative and quantitative methods of collecting and processing the research material were used. The results of the research confirm significant differences among the respondents of the target groups, given the level of awareness and attitudes to the collaborative approach in waste management.

A total of 57% of respondents believe that the public is not sufficiently informed and prepared for active participation in the establishment of a waste management system. A total of 22% of respondents believe that the public is sufficiently informed and prepared for active participation in the establishment of a waste management system, while 21% of entities have no opinion on this matter because they are not certain about the correct answer and are partially informed. From the *public sector*, 22 out of 30 analysed representatives believe that the public is not sufficiently informed and prepared for active participation in the establishment of a waste management system, while most of the respondents from the *economic sector* expressed the opposite view that the public is sufficiently informed and prepared for active participation in the establishment of a waste management system. From the *civil sector*, 7 entities of the total of 15 respondents stated that they were partially and incompletely informed of the specified matter.

The opposing views of the public and economic sectors as well as the neutral position of the civil sector reflect the division and confusion of the respondents in the public sphere lacking the deliberative engagement of the participants. In order to address a global problem, such as climate change and waste management, clear and global public information and participation is necessary at all levels, otherwise the public will remain confused and create the impression that this problem is solved elsewhere without them. Climate change and waste management are likely to be a permanent problem today that is constantly creating new problems that need to be solved because they pose certain challenges to management, but also create other doubts.

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