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MUNICIPAL WASTE MANAGEMENT COMPANIES AND THEIR WASTE PREVENTION STRATEGIES – EXPERIENCES FROM GERMANY*

Introduction. – From 2020-2023, systematic research in a mixed-methods approach was conducted in the state of Schleswig-Holstein, Germany, on the topic of waste. In order to extend the discourse chain of waste generation and waste prevention beyond the waste generators (mainly private households), all municipal waste companies in the study area were contacted to elicit their control and influence possibilities on waste events via 15 in-depth interviews. The discourse and the relevance of waste in the daily work of waste management companies were traced. So far, the focus has been mainly on plastic waste and the single-variety collection of organic waste for compost production. Waste fractions such as food waste have only recently gained greater political attention. Intervention possibilities and information channels of waste management companies are identified, and the question of why they sometimes fail to be used or accepted by the population is investigated.

State of research and relevance. – Waste and refuse studies only attract niche

* This contribution, together with *Role of geography in plastic pollution research and social implications* from Florin-Constantin Mihai and *The arts of living unwell: postindustrial lives and waste as an event* from Gabriel Espinoza Rivera and two more articles in the n°1 2024 issue of *documenti geografici* (*Students' relationship with waste: the experience of the zero waste approach in educational contexts* from Federico Venturini and Andrea Guaran, and *Rethinking agricultural waste for bioenergy in rural areas: an application model for the province of Foggia* from Marilena La Bianca), is part of a collection of papers dedicated to the expanding field of waste studies, emerging from discussions held at the EUGEO 2023 conference, held in Barcelona, particularly within the 'Exploring the interconnection between geography, waste, and power dynamics for sustainable futures' panel. The title itself reflects the ambitious intention to investigate, through the geographical lens, the theme/problem represented by waste, evaluating its fundamental political dimension, considering the power relations that revolve around it, and trying to understand how much the concrete realization of the principles of sustainability is closely anchored to the waste issue.

attention in spatial research, economic, social, or urban geography. Despite the growing interest in sustainability studies and the associated goals of reducing, reusing, and/or recycling products of any origin in a successful circular economy, spatial criteria as explanatory measures of waste generation, waste origin, waste governance, or waste behavior are not of major relevance in established waste sciences.

The topic has a strong multidisciplinary character and is subject to different sets of questions and methods from natural and social science subjects. Thus

a) Waste sciences are primarily concerned with technology-related and cost-effective processes that aim to quantify various waste fractions and their recycling potential (Galanakis, 2015; Williams, 2005);

b) Economic science perspectives place the focus on content-related and spatial networking, interlinking, and mobility of goods on their "journey" to littering (Davies, 2012);

c) Legal and political science studies concentrate on the organizational understanding of who is responsible for waste disposal against the background of public hygiene and hazard prevention and which waste fractions are to be treated and how (Garske and others, 2020; Busetti, Pace, 2023);

d) The social sciences are concerned with stakeholder groups, different interests, perceptions, and motivations, why and when waste is generated, how waste is handled during disposal, and how open-minded and controllable people are to avoid waste (Drackner, 2005; van Bemmel, Parizeau, 2020);

e) Geographical perspectives concentrate on how production-waste chains are spatially structured and function; which (formal or informal) forms of waste governance exist; why waste separation and waste disposal work differently "well" in some regions, cities or districts; which contradictions arise between avoiding waste on the one hand and valuing waste as an economic or social good on the other (e.g., so-called food waste for reuse in food bank systems) (Gille, Lepawsky, 2021; Gregson, 2023; McClintock, Morris, 2024).

In the global debate on sustainable resource conservation, which has gained relevance not only as a result of the global climate crisis (Meadows and others, 1972), new waste fractions have repeatedly been identified as potential recyclable materials against the backdrop of technical innovations and growing pressure in social discourse. This is associated with the

goal of establishing a complete circular economy and, in the best case, a zero waste society (Geissdoerfer, Savaget, Bocken, Hultink, 2017; Savini, 2019), in which the so-called waste hierarchy pyramid in its stages of waste prevention, reuse, recycling, and other recovery becomes ever broader in order to minimize the last stage of disposal (Giordano, Falasconi, Cicatiello, Panciono, 2020; Zhang and others, 2022; EEA, 2023). As a result, the waste industry has grown into an economic sector that finds itself in the paradoxical position of not only propagating waste prevention strategies but also demonstrating economic success through the utilization of capacities (Zacho, Mosgaard, 2016). Supra- (UN), national and European Union directives (EU, 2008) embed waste management at the meso and micro level of federal states, districts, and municipalities (in Germany) in a complex legal framework (BMU, 2020; Gumbert, 2022; D'Angelo, 2023), which specifies both short-term and long-term tasks and objectives of waste management in Germany in the form of waste management concepts (City of Kiel, 2021).

The interest in waste not only exists at different levels, from the global macro level to the micro level of individual waste garbage cans, but also triggers a competition between individual waste fractions, time-variable hierarchies of attention, their quantities, and their processing. In addition to the established separation of plastic waste, paper, glass, organic waste, and residual waste in Germany (Umweltbundesamt, 2021a), the social discourse has been focusing for a few years on the food waste fraction originally disposed of in residual waste or organic waste, which has been assigned its own attention niche against the background of climate-damaging waste of resources such as water, soil, air, labor, and finances (Jürgens, 2023). Not only does this example show that the attention to detail with regard to waste is increasing, but waste governance is also focusing on waste in progress in refrigerators, kitchens, and supermarket purchases in addition to "obvious" waste such as used glass, packaging, or fruit bowl remnants (in private households). This has already led to a large number of prevention strategies, education campaigns, rescue activities, and shopping tips (Närvänen, Mesiranta, Mattila, Heikkinen, 2020), but without highlighting the contradictions between individual stakeholder groups, reactance or lack of acceptance of waste separation or waste prevention (Simões, Carvalho, Matos, 2022; Casonato, García-Herrero, Caldeira, Sala, 2023).

Research questions. – The focus of the study presented here is the general discussion about waste prevention strategies in public waste management companies and what successes or failures they have had with their existing instruments for waste disposal and waste prevention in private households. Public waste management companies fulfil a politically defined mandate at the municipal level to ensure systematic and comprehensive waste disposal in Germany. Their main tasks are waste disposal services for private households and waste prevention education measures. For commercial waste, there are other private and special waste disposal companies that were not part of the following study.

This article combines structures of guiding top-down government, laws and rules that bind waste management companies into a fixed corset, as well as governance patterns that aim as a dialog-like scheme at persuasion, compliance with standards, and coordination processes between waste management companies and customers. From this, the following core questions are formulated, which are taken up in the *Results* section:

1) Which are the key challenges for effective waste prevention and management?

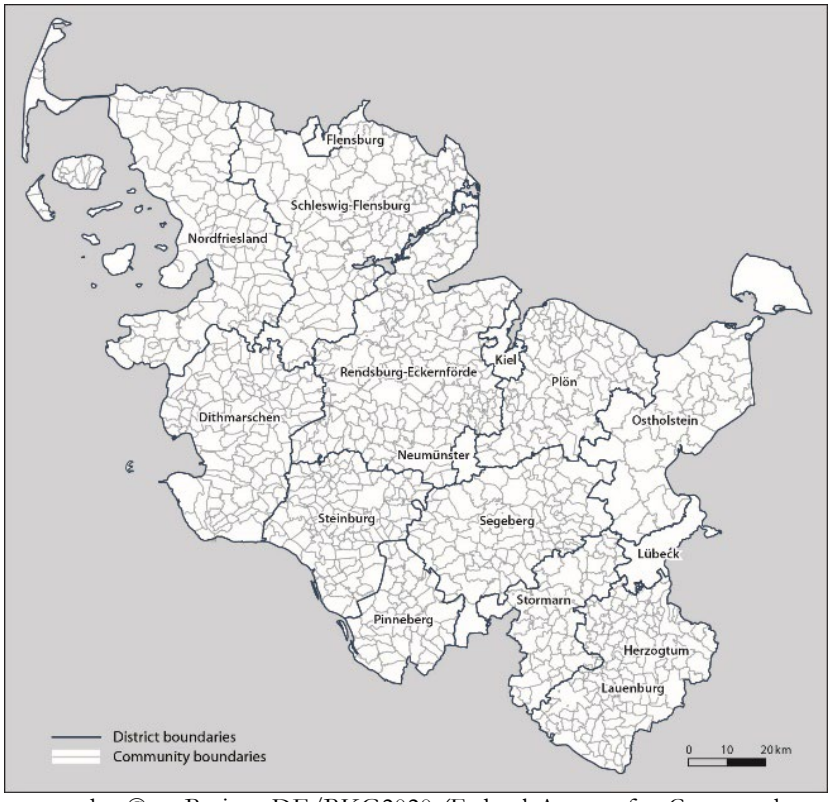
2) Which are the conflicting objectives and values between the different actors?

3) What solutions are offered, and how are they used?

Methods. – Own surveys are presented as a case study for the German federal state of Schleswig-Holstein in order to break down the practical experiences on the topic of waste disposal to the meso level of a federal state and the micro level of individual districts. Schleswig-Holstein is the northernmost province of Germany and lies between Hamburg in the south and Denmark in the north. The experiences of "public waste management authorities" are documented in order to derive the *status quo* of relevance and knowledge and the current technical implementation at the "waste base". For this purpose, 15 interviews with all 16 county-based municipal waste management companies in Schleswig-Holstein were conducted digitally during the Corona crisis in the period June-August 2020. The spatial allocation of the companies is shown in figure 1. One public waste management company is assigned to each administrative district. The different district sizes show that there is a mix of highly rural and a few urban areas. This mix not only reflects the different population densities and types of housing, but

also the challenges faced by waste management companies in finding adequate solutions for waste disposal and waste education.

Fig. 1 – *Study areas and districts of waste management companies in the province of Schleswig-Holstein, Germany*



Source: map data©geoBasis – DE/BKG2020 (Federal Agency for Cartography and Geodesy Germany); design by author

The interviewees were either the heads of the waste management companies or the managers responsible for waste prevention strategies. The discussions were semi-structured and followed a set of guiding questions on topics such as waste disposal and prevention strategies that could snowball into new questions in a mutual dialog. In the following text, the companies surveyed are distinguished by number (see Appendix Bibliography). These statements are mirrored with expert and focus group interviews from politics and business as well as transcribed texts from TV documentaries in which experts and other stakeholders address their discourse strands on

waste prevention. The TV documentaries not only expand the selection of waste experts who could not be interviewed by the author but also the spatial experience of waste disposal outside the own study area.

How relevant different sources of information on waste prevention are for private households in comparison to each other was surveyed in a convenience sample in 2022 and 2023 (N = 150 people). These standardized and anonymous surveys were conducted at nine different locations as part of the author's public lectures for the Schleswig-Holstein University Society on the topic of waste behaviour.

Results

Key challenges for waste prevention. – Interviews with experts show that "ensuring waste disposal as a primary task" is the focus of the companies (Company 1). This applies above all to the waste fractions that have been established for years, such as plastic waste and organic waste, which are affected by incorrect filling and so-called interfering materials that make it difficult to recycle by type. Contaminants of up to 50% in the so-called yellow garbage can for plastic waste are not uncommon, which also contains residual waste, organic waste, used paper, or incompatible forms of hard plastic that are not suitable for recycling.

Such problems occur primarily in multi-story residential buildings and in socially deprived residential areas. The fact that entire districts could be "stigmatized" due to conspicuous misfilling statistics makes it clear that waste disposal can become a political issue, so that these statistics are only used internally by waste management companies.

In the area of organic waste, there is not only the problem of organic waste garbage cans being incorrectly filled with plastic contaminants but also the incorrect disposal of organic waste in residual waste bins, where a "disgusting effect" (Company 15) prevents households from disposing of this waste "correctly" via the organic waste garbage can. Company 5 points out that according to sorting analyses in 2008/09, 40-45% of usable organics still ended up in the residual waste garbage can, although this figure had improved by 10% by 2017.

This form of disillusionment is also reflected in the low staffing levels of waste management companies in the area of public relations, which is responsible for waste prevention strategies. Under the Closed Substance Cycle Waste Management Act, public waste management companies are

obliged to provide waste advice. However, Company 12 points out that for various households, "filling the organic waste garbage can correctly" is a "life task". Topics and waste fractions compete within the administration of waste management companies, which therefore tend to be skeptical about new challenges. A lack of money and personnel (Company 4) means that new issues are not tackled.

If political guidelines also define the framework criteria for waste governance, the relevance of a new waste fraction, such as food waste, for example, is lost in the waste management concepts. In a trickling down from the highest political authorities of the state government to the municipal level, the topic of food waste and related prevention strategies are becoming less and less important. Rather than the other way around, it is the waste management companies' specifications and ideas that they present to politicians. However, if there is a lack of innovative strength and personnel commitment, the focus is on established structures that can be further optimized so that waste purity and the energy efficiency of waste take precedence over waste avoidance. Economic considerations compete with waste avoidance. Company 7 puts it in a nutshell: "Retailers can't earn money by avoiding waste". Energy and heat generation as well as composting are the most important forms of waste downcycling, which are semantically positively postulated as waste recycling. "Recycling can also mean that the waste is simply incinerated in a waste-to-energy plant and then used to generate electricity (Video 1).

Conflicting objectives and values between different actors. – Waste management is largely regulated by laws at different spatial levels and responsibilities, as well as regional waste management concepts. This does not mean that local solutions are needed and necessary at the grassroots level to ensure waste disposal on the one hand and to communicate waste avoidance to specific target groups on the other. The most important framework for this are so-called waste management concepts, which document the objectives, implementation, and evaluation of previous waste volumes for the various waste fractions and the prospective development of waste volumes. The coordination of waste management companies in mutual learning on best-case practices can only be recognized to a limited extent on the basis of our own discussions: Although in some districts, such as the city of Kiel, party-political scenarios such as the "zero waste city" concept have found their way

into the local waste management concept, others emphasize that waste is "not the main issue of political parties" (Company 4). As a rule, the companies formulate their own goals in order to achieve maximum success with the existing resources (from their point of view). These concepts are then adopted by the council assembly or district parliaments. The success of waste management companies is primarily based on the development of waste volumes, infrastructural equipment, economic considerations in the form of waste fees, and the potential for recycling waste fractions whose revenues depend on international recycling markets.

As an ongoing task, the focus is on greater waste purity of plastic waste and organic waste, which involves inspection, control, and inspection of waste garbage cans at the micro level of individual households and buildings. Irregular sorting analyses are carried out on a sample basis in order to quantitatively measure the development of waste behaviour (Jürgens, 2021). Detailed studies on the waste behaviour of their customers are generally not available.

The focus is therefore on technical and logistical processes, which local politicians tend to use uncritically. Where possible, there are contacts with environmental groups and activists at public events in order to jointly present waste avoidance goals. The real competition exists at the garbage can, where waste management companies use GIS-controlled routes and increasingly digitally controlled garbage can systems to optimize their disposal and justify customer-specific charges.

Where necessary, the system also relies on the mutual control of households at the micro level to steer waste behaviour. "In rural collection, I put my bag on the street and have a neighbour who also checks whether I have separated my waste properly. I don't have any of that in urban areas. There is anonymity" (Video 1).

Solutions and obstacles to waste avoidance. – Waste management companies work with a variety of waste prevention and control strategies:

a) Use of analogous information channels such as print media, posters, and market stalls as well as digital information channels such as Facebook, Instagram, or Youtube;

b) Cooperation with kindergartens and schools in the context of environmental education, in the form of practical days and extracurricular learning locations;

c) Maintaining contact with private households, including in "unusual" places such as cemeteries, campsites, and vacation homes;

d) Sorting instructions in various languages;

e) Guiding and directing customers via waste fees and pictograms;

f) Incentives via small gifts; handing out bin bags; exemption from the organic waste bin.

This list captures the overall picture of prevention strategies across all waste management companies. A desirable evaluation of the success of these strategies is not available from the companies, which underlines the erratic nature of these activities.

The example of food waste shows that previous campaigns and actions are not permanent. Other face-to-face contacts, such as information at weekly markets, were terminated because they were "disproportionate to the effort involved" (Company 5). "The [people] want to shop and have their peace and quiet" (Company 5). Therefore, further informational approaches must be developed in cooperation with housing associations, with which materials, flyers, and leaflets are developed to improve waste separation of all kinds, especially in multi-story buildings (Company 6). No direct influence on waste disposal, let alone waste avoidance in private households, on the part of waste management companies is discernible. "You have this economic incentive via the waste fees**.** And then, of course, you also have to do educational work. This starts in kindergarten and schools to create a certain level of awareness among the population" (Video 2).

The aim is to involve the population in their regional particularities and life demands on waste disposal and to convince them of the relevance of the waste issue in constant repetition. At the same time, the population itself is exposed to constant structural change, such as an ageing society, smaller households, and demographic pluralization, which must be reflected in changed and adapted customer education solutions. Consumption patterns have adapted to this, tending to produce more rather than less waste.

This also includes tips on sustainable shopping baskets. Schools and kindergartens must be used as multipliers in order to "educate parents" (Company 12). Puppet shows and lunch box activities for children, customer magazines in the letterboxes of older citizens, and social media with a corresponding reach for younger adults can be identified as a range of

different forms of contact, resulting in an "overall construct" (Company 13) of educational measures. Contacts with party-political bodies and interest groups such as rural women's associations, business associations, and food savers can also broaden the concept of waste avoidance. "Only for the actual implementation does the sovereignty lie with the people themselves ... you can accompany and educate them, but the purchasing decision [and the associated waste behaviour] is made by each individual" (Company 13). The already complex system of waste separation in Germany faces the challenge of "not overburdening users" (Company 14) if there is even an additional waste fraction like food waste. How relevant the information source "waste management companies" is compared to other sources was surveyed in a data sample by the author in 2022/2023 (N = 150 people). Over 40% of respondents were not aware of such services or did not use them in any way. Around 20% use the information more or less frequently.

Discussion. – The present study only shows a section of the discourse on waste prevention that links waste management companies to private households. In fact, the range of potential stakeholders is broader, encompassing agriculture, industry, retail, gastronomy and transport logistics: «Improving waste prevention and management requires action across the full product lifecycle, not merely the end-of-life phase» (Corvellec, 2016, p. 3). To this end, there are «regulatory, economic, communicative, and technical instruments» (*ibidem*), which include framework guidelines and bans (e.g., on product materials, type of packaging), financial burdens via levies and charges (e.g., in the form of garbage can fees), the way in which waste prevention messages are presented in the media, as well as technically feasible waste separation and recycling systems. Not all of these instruments are available everywhere in an international comparison, nor is even the definition of waste prevention or even the use of other terms and synonyms uniform in an international or national comparison (Corvellec, 2016; Umweltbundesamt, 2021b).

It is far more difficult to measure the functionality and thus the sustainable success of prevention strategies. Zacho and Mosgaard (2016) discuss the problem of local waste management in the UK and show that, analogous to the German example, waste prevention is more of a necessary evil in the overall concept of waste disposal, which waste management

companies "also" have to deal with, although the personnel and financial resources for this are low and the waste companies are driven more by individual commitment and individual innovative strength than by institutional requirements.

Above all, there is a lack of systematic monitoring systems that make the type and extent of waste avoidance in private households measurable and could establish links to existing waste avoidance strategies. «In previous case studies, it has not been possible to determine exactly which measures influenced the documented waste reductions» (Zacho, Mosgaard, 2016, p. 987).

The concept of waste avoidance is embedded in a whole bundle of participating motivations on the part of private households, such as moral-ethical standards, habituation, social norms, or cost savings on the one hand, and obstacles or open reactance, such as disinterest, lack of understanding, senselessness, or lack of possibilities for waste separation on the other (Cox and others, 2010, pp. 200-202). The system of waste separation and waste avoidance not only reaches its mental limits but is also perceived as an intrusion into the most private area of household management. Responsibilization (Grunwald, 2018), i.e., the social demand of the participating citizen for a worthwhile goal of sustainable lifestyle management, is interpreted as an individual loss of control and creativity. In analogy to the classic work of Thomas Schelling (1978) on *Micromotives and macrobehavior*, citizens ignore the small-scale nature and significance of their own waste behaviour from the cumulative values of waste disposal of all citizens.

This makes it all the more important to break down the originally faceless population using filter techniques and segmentation in order to develop more targeted instruments for waste prevention using the entire spectrum of so-called new media. Studies by the Federal Environment Agency in Germany segment their samples one-dimensionally according to age groups, gender (Umweltbundesamt, 2020a) or income (Umweltbundesamt, 2020b, p. 5) on the one hand, and multidimensionally according to so-called social milieus (Umweltbundesamt, 2021b, p. 35-37), which were characterized as upscale milieus, bourgeois mainstream, precarious milieus, critical-creative milieus, and young milieus on the other. In the form of group discussions, all milieus were sufficiently sensitized to environmental issues but saw the greatest problems in coping with everyday

life and limited financial resources in systematically orienting their everyday practices towards waste prevention (Umweltbundesamt, 2021b, pp. 183-185). This was used to formulate milieu-specific communication offers (Umweltbundesamt, 2021b, pp. 185-194). A regionalization of results was not the focus, nor was the critical questioning of whether milieus can better describe the segmentation of test persons than the concept of so-called lifestyle modules. Discourse-linguistic and media-scientific findings are therefore also coming into focus in order to market waste prevention in language, images, audio, and video (Teoh, Koay, Chai, 2022). A form of "involvement relationship" (high involvement versus low involvement relationships between stakeholder groups according to Gadde, Amani, 2016, p. 1411) between waste management companies and customers, who are in a transparent exchange and can mutually improve their activities from this, cannot be derived against the background of the reality documented here at the waste garbage can base.

Research perspectives. – The study shows that the challenges of waste disposal and waste avoidance cannot be solved by legislation and infrastructural offers alone, but also by how these rules are accepted and implemented by customers. Waste fraction analyses are used to document the extent, composition, condition, and error rate of waste disposal. Due to anonymous waste garbage can samples, however, they cannot provide any information about which households have disposed of waste, for what reasons, before which settings and information, and to what extent they are amenable to avoidance strategies. Typically, the waste fraction analyses only have one relevant filter for revealing room-specific features, namely the type of settlement and residential building (rural, urban, detached house, multi-story building). Other objective socio-demographic criteria or subjective attitudes towards the condition of the associated waste garbage can are not available. This also applies to knowledge about upstream (grocery) purchasing behaviour, which can promote downstream waste disposal, and whether the reasons for waste disposal or the interest in waste avoidance can also be found in product structures, qualities, and origins on the supplier side. It is not without reason that some waste management companies refer to strengthening the sustainability concept of waste right from the shopping basket.

If one concentrates on the largest black box for waste disposal companies, that of atomistically organized and anonymous private households, methodological approaches can be identified that have been tried and tested in retail research and marketing science. The latter work with segment analyses in order to distinguish group-specific anomalies in the acceptance of and demand for localities, business formats, or products using statistical methods in the form of cluster and discriminant analyses. Practices that follow the theorem of the attitude-behaviour gap (Moraes, Carrigan, Szmigin, 2012) and the Theory of Planned Behavior (Fishbein, Ajzen, 1975) can be assigned to attitude sets that may be sufficiently consolidated but can still be changed through learning processes or biographical developments. The latter theory aims to determine how (probabilistically) predictable actions are based on perceptions, attitudes, and moral-ethical patterns. By combining attitudes, practices, and demographic criteria, lifestyles and lifestyle modules can be characterized that shape people (groups) in individual life situations and living situations. Lifestyle modules (e.g., leisure, shopping, fashion, food, mobility) can be quite contrary to each other. For example, sustainable shopping does not necessarily have to go hand in hand with thoughtful shopping and waste avoidance. Using the example of the food-related lifestyle (Grunert, 1993), i.e., how people develop different valuations of food through experience, knowledge, and consumer behavior, it can be shown that conforming patterns in dealing with food waste can be derived from this (Jürgens, 2023).

Although socio-demographic indicators are generally available as public data sets in a systematic and comprehensive manner, which can be used to measure the representativeness of data analyses, the identification of attitude-behaviour constellations is a criterion that exists across age groups, gender, income level, household size or ethnic background. In this way, target groups shall be formulated that may be subject to local characteristics and age-specific openness, e.g., to digital information channels, but nevertheless require differentiated wording in order to satisfy their attitudes, their personal involvement, and their level of knowledge. Waste prevention requires marketing strategies that are tailored to target groups, who are not only financially aware of the ecological damage of waste on the meta-level, but above all understand the disadvantages on their personal micro-level.

Conclusion. – The author's expert interviews focused not only on the competition between different waste fractions (plastic waste, organic waste, residual waste, and food waste) or the competition between economically relevant waste disposal and "uneconomic" waste avoidance from the perspective of some waste companies, but also on the success and failure of avoidance strategies. It is striking that not only the interest of private households is low to deal with the information offers of waste management companies, but also the interest of municipal politics, which commissions and controls the waste management companies, is expandable. The interviews show that the waste management companies generally set their own priorities and that the topic of waste avoidance has so far received only marginal attention from municipal politics in competition with other topics. The waste management concepts formulated for a period of five years will show whether more sustainable topics, such as the previously "unknown" topic of food waste, will find their way into municipal waste governance. The discourses and solutions in the municipal operations, which are characterized by both rural and urban settlement structures, are not uniform. While some waste management companies are in a position to discover innovative topics for themselves and to learn from each other in cooperative networking with "friendly" waste management companies, other companies are cut off from this.

The claims of policymakers and the interest of diverse activist groups in sustainable consumption in mainstream household practice have not yet reached the garbage can. This makes conceptual approaches all the more important in order to bundle open-mindedness, attitude sets, and practices of private households with the help of quantitative and qualitative surveys and thus enable waste management companies to provide more target group-specific information. Diverse wording and nudging for different groups of people is necessary to raise awareness of waste education in general, which should not only be carried out by waste management companies but is also relevant for the environmental-ethical marketing of retailers and primary producers in order to minimize waste susceptibility in private households already at the supermarket shelf.

Where is the geographical reference? Waste and waste avoidance shall be discussed on three causally geographically relevant spatial levels: a) via the sustainability discourse on the global macro-level. Food waste alone accounts for 6-8% of all anthropogenically emitted global greenhouse

gases (Amicarelli, Lagioia, Bux, 2021, p. 2); b) on structures of waste governance (Warshawsky, 2015), which can be assigned to the meso-level of nation states and their regions (using the example of the Schleswig-Holstein region); c) on residential areas, living conditions, and behaviors of individual private households at the socio-spatial and demographic micro-level (Joos, Carabias, Winistoerfer, Stuecheli, 1999) (e.g., multi-story residential buildings), where neither waste is sufficiently separated nor the people can be reached by information. Waste studies therefore also become socio-geographical case studies in order to not only delve into the particularities of residential areas and populations but also to find local solutions for dealing with waste.

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Appendix: List of interviewed waste companies (see Fig. 1)
Company 1: Ostholstein
Company 2: City of Neumünster
Company 3: Steinburg
Company 4: Pinneberg
Compnay 5: Rendsburg-Eckernförde
Company 6: City of Lübeck
Company 7: City of Norderstedt (part of the district of Segeberg)
Company 8: Nordfriesland
Company 9: Segeberg
Company 10: Dithmarschen
Company 11: City of Kiel
Company 12: Plön
Company 13: Schleswig-Flensburg
Company 14: City of Flensburg
Company 15: Stormarn and Herzogtum Lauenburg

Le aziende municipali di gestione dei rifiuti e le loro strategie di prevenzione dei rifiuti: esperienze dalla Germania. – Sono stati tracciati il discorso e la rilevanza dei rifiuti nel lavoro quotidiano delle aziende tedesche di gestione dei rifiuti. Finora, l'attenzione si è concentrata principalmente sui rifiuti di plastica e

sulla raccolta differenziata dei rifiuti organici per la produzione di compost. Nuove frazioni di rifiuti, come i rifiuti alimentari, stanno guadagnando attenzione. Le interviste agli esperti dimostrano che le affermazioni idealistiche della politica, dell'amministrazione e dei gruppi d'azione sulla prevenzione dei rifiuti e sugli obiettivi "rifiuti zero" sono espandibili nella pratica reale delle famiglie e del loro comportamento in materia di rifiuti.

Keywords. – Governance dei rifiuti, Prevenzione dei rifiuti, Gestione dei rifiuti

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