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EXAMINATION OF SOCIAL ATTITUDES TOWARDS WASTE MANAGEMENT TECHNOLOGIES

A hulladékgazdálkodással kapcsolatos társadalmi attitűdök vizsgálata

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Abstract

Environmental protection has a significant function among social problems. One of the chief environmental concerns is waste disposal. The aim of this study is to demonstrate earlier research results and a research plan (The research project is funded by TÁMOP-4.2.2.A-11/1/KONV-2012-0015 grant.) which promote the social acceptance of newest waste management technologies. The environmental shaping process of human being has strong social aspects and so its consequences have the same nature (Giddens, 1997). Based on an extended literature review some significant research findings concerning environmental awareness will be presented in this paper. Among others the motivating factors of environmental activities will be analysed. Then the social attitudes related to waste management will be examined.

Beside waste management technologies our research will concentrate on thermolysis. From juristic point of view thermolysis is an incineration process and the local communities – even without green organizations – frequently protest against it. In our opinion, this kind of protest however can be eliminated with the help of comprehensive information exchange, credibility and social inclusion of the local communities.

Keywords: *waste management, termolyses, environmet consciousness, conflicts, social acceptance*

Összefoglaló

A környezetvédelem előkelő helyen szerepel a társadalmi problémák sorában. Az egyik legfontosabb környezettel kapcsolatos gond a hulladék elhelyezése. A tanulmány célja, hogy olyan korábbi kutatási eredményeket és egy kutatási tervet mutasson be, amelyek segítségével elő lehet mozdítani a legújabb hulladékgazdálkodási technológiák társadalmi befogadását. A környezetalakító tevékenységünk eredete ugyanis társadalmi jellegű, és így a következményeinek túlnyomó része sem lehet más természetű (Giddens, 1997). Először egy széleskörű szakirodalmi áttekintés keretében a környezettudatossággal kapcsolatos kutatási eredményeket vázolunk fel, majd a környezetvédelmi aktivitást motiváló tényezőket elemezzük. Végül a hulladékgazdálkodással kapcsolatos társadalmi attitűdöket vizsgáljuk. A hulladékgazdálkodási tevékenységek közül elsősorban a hőbontáson alapuló hulladékhasznosítási technológiára koncentrálunk. Jogilag a termolízis is hulladékégetésnek minősül és a lakosság – a zöld szervezetek nélkül is – előszeretettel tiltakozik az ilyen eljárások ellen. Véleményünk szerint az ilyen jellegű

társadalmi tiltakozás objektív információkkal, hitelességgel és a helyi közösségek bevonásával azonban csökkenthető.

Kulcsszavak: *hulladékgazdálkodás, termolízis, környezettudatosság, környezeti konfliktus, társadalmi bevonás*

JEL code: *O13, Q53*

Introduction

In contrast to the international practice, opinion-polls have rarely examined the environmental view of inhabitants in Hungary. Only few deals with the examination of relationships of the inhabitants and the environmental programmes. It has already well known fact that environmental subsidies of the European Union and the Hungarian State are also in vain, if there was no appropriate planning and the involvement of population did not occur. Environment protection which has often priority in settlement development has a long term development chance only if the population believe in sustainability and they lead a conscious, environment-friendly life. Therefore, in the future it will be necessary to elaborate such local and regional strategies, which will strengthen the responsibility of people for environment and will be resulted in strong environmental parochialism (Kovács, 2001).

In the current study based on literature review mainly the social attitudes related to waste management will be examined and research findings concerning environmental awareness of local communities and its social acceptance will be demonstrated.

Material and methods

A project called ‘Basic Research Development in the Pyrolysis Technology Research Center’ is implementend between 2012 and 2015 in Szent István University. In the frame of this project our research group set the examination of social acceptance of incinerator operating by thermolysis technology and the management of already existing conflicts as aims. We examine what kind of attitudes the members of local communities have concerning these technologies.

We chose settlements affected thermolysis technology from a certain point of view. Therefore, we visited smaller settlements where thermolysis enterprises ran or the foundation of such plant was hindered. We also chose a control settlement where there wasn’t such an enterprise and it was not planned to be established. Our control settlement is Tura, where we already made some explorative interviews to get to know how the waste management conflicts had been managed there.

First, we studied a wide range of books, journal articles, research reports and case studies concerning environment awareness and the social acceptance of waste management technologies. Until now only limited information has been available about these topics. Therefore, we consulted with some experts to improve our understanding concerning environmental issues and waste management technologies. In this study we present some of the most important research findings of the literature review.

Examination of environmental awareness

In the 1970s environment awareness achieved a prominent position in the in the policy agenda and also in researches in the Western countries (Dunlap et al., 2000). However, Maloney and Ward (1973) pointed out at that time most of the people were committed to environment protection in vain, since they could not be considered environmentally conscious based on their knowledge or behaviour (Maloney-Ward, 1973).

The environmental awareness is a type of behaviour which practical aim is the formation of harmony between man and environment. The degree of environmental sensitivity, problem sensitivity and environmental awareness can stem from genetical, psychological-mental and learned components (Catton – Dunlap, 1978; Kovács, 2007). The individual features contain the environment oriented thinking, value judgement and attitude as well. The components of environmental awareness are on the one hand the inclination to the positive or negative environmental answers, on the other hand the views related to environment formed by learned, acquired knowledge and tendencies of action arising from that. So the environmental orientation depends on learned behaviour patterns, scientific knowledge or ideas supported with ideologies (Kovács, 2007). However, other researchers found that that factual knowledge has no effect on environmental awareness (Grob, 1995).

Nagy and Káposzta (2003) analyse in their study the interactions between environment and agriculture. They conclude that the EU directives and regulation related to rural development and agriculture can have an important effect on the state of development of environment awareness of rural population.

The environmental culture of residence and all of its elements have an effect on the environment awareness of the residents of the place. The media, the education, the research and development, the legislative regulation, the enterprises, the civil organizations, the institutions and the social environment around the individual influence the scale of values and beliefs. They have also impact on ecological awareness level, namely how much information is possessed related to the state and problems of environment and their solutions. The values, the beliefs and the ecological awareness together determine the attitudes related to environment and the general positive or negative relations to environmental problems (Kaiser et al.; Schafferné Dudás, 2008).

The residents' relations to environment protection are mainly determined by their direct affection. Those environmental impacts which are visible and have direct effect on us and make the inhabitants active can change the environmental behaviour. However, often even they are not enough to do so. The environmental awareness of the population usually consist of only the disapproval of environmental pollution and often do not care about the restricted availability of the natural resources (Vass, 2008).

Beside worries about job and certainty of existence, environmental problem is one of the most important issues people are engaged according to the Western-European opinion-polls (Kaplan, 2002; Kovács, 2007). In Hungary one of the earliest nation-wide representative research was conducted by László Kulcsár, Tamás Hársfalvi and Tibor Misovicz between 1987 and 1990. They examined the knowledge and orientation of people related to environment. They assumed that there is a significant relationship between the objective ecological state of environment and the ecological consciousness of people.

They found that environmental protection had a significant position among social problems. Almost half of the respondents were satisfied with their surroundings from ecological point of view. One-third was unaware of any ecological problems having national importance. They stated that the younger, more educated, urbanised people who have better housing conditions showed stronger sensitivity for environmental problems (Hársfalvi et al., 1989). The survey of the Labour Alliance (HUMUSZ) also confirmed that the interest in environmental problems significantly grew in the circle of university students and the younger generation is more aware of environmental issues.

One of the most often-mentioned trouble related to environment was waste disposal. While more than half of the respondents (56%) had news about environmental problems from mass media (press, radio, television, etc.), others (11%) knew them by hearing. Almost three-fifth of the respondents even did not know what organizations dealt with environment protection in Hungary. Half of the respondents were satisfied with information concerning environmental issues in all respects. But almost 30% of the respondents doubted its authenticity. They thought usually mass communication was a more authentic information source than authorities (Hársfalvi et al., 1989).

They distinguished three types of ability of act:

1. willingness to individual act;
2. willingness to collective act;
3. willingness to financial sacrifice.

The activity in environmental issues can be seen on Figure 1. Only 3% of the respondents were members of any environmental organizations. 15% took part in environmental protection activities. And only 5% stated that they were not interested in environmental issues.

Those people were more active, who connected directly to environment (by touring, hiking, fishing, holiday, etc.). Moreover, the real activity depends on individual responsibility taking, perception of the crisis of civilization (Hársfalvi et al., 1989).

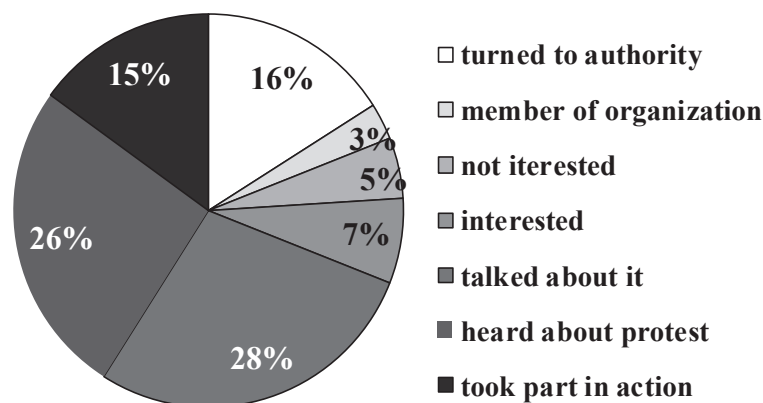


Figure 1. The activity of population concerning environmental issues

Source: own editing, 2013 based on Hársfalvi et al., 1989.

In the research of TÁRKI in 1996 it was found that environmental problems affecting Hungary were very serious already. This survey registered significant defects related to

knowledge of environmental damages except for the acid rain, the greenhouse effect, the ozone hole, the smog and the radioactivity (Vas, 2008).

According to the findings of the opinion-poll conducted by Hungarian Gallup Institute in 2004 the overwhelming majority of population would have been willing to make some sacrifice, but a lot of people expected to find solution from others. Only a smaller group of the respondents thought that the individual responsibility was as important as the liability of local authorities, environmental organizations and state for solving environmental and nature protection problems. The respondents thought that the government should have raised revenues for burdening environment heavily and dealt more severely with the largest environment polluters. However, 70% of the respondents rejected to pay more tax, even if it would have turned to improve the state of the environment (Kovács, 2007).

Examination of the social acceptance of waste management

In last few years mainly the impacts of pollutions, food safety and consumption waste have been in center of interest. The issue of environmental awareness is in close connection with the social acceptance of waste management technologies. The incineration technologies are important parts of environmental management and destruction of waste, since most of the materials can be recycled only limited times and in many cases the pollutions being present in the waste make impossible the reuse of that material. According to the EU regulation the chief aim of incineration is to enable the waste to be used as energy resources. It produces energy, since the produced energy is larger than the used energy during the incineration. In addition, the so produced surplus can be used indeed in the form of energy heat or electric energy (Csegődi, 2011).

The destruction of waste though incineration can happen in different ways:

- hazardous waste incinerator;
- communal waste incinerator;
- green waste/biomass incinerator;
- thermolysis/vitrification (www.humusz.hu).

In the absence of objective information the decision makers can take up a solid and common position. The interest of environment and society is not to accomplish solutions destructive to environment or uneconomic, but arise an opportunity to investments that serves the interest of the whole society and the environment.²⁷

The environmental organizations usually emphasise the negative impacts of incineration technologies on environment. They think that incineration is the most expensive method of treatment of waste which can not replace landfill, even it produces slag which is considered as hazardous waste. They say that incineration contributes to global warming and it is often considered to be energy-wasting.

The environmental organizations achieved already success in preventing the establishment of incineration and pyrolysis plant by their efficient interventions. Such a place was Sajóbáony. It was planned to destruct 40.000 tons of waste in a thermic way. However, the plant could not comply with the strict regulation of emission of waste incineration and so more civil

²⁷ Research plan of TÁMOP-4.2.2.a-11/1/konv-2012-0015 project

organizations raised objection against the environmental impact study. Therefore, the Environmental Inspectorate dismissed its charge (Szuhi, 2009).

Although the pyrolysis plant could not be launched in Sajóbáony, the second biggest industrial waste incinerator was established here. In the beginning the social acceptance of the incineration was very bad. Therefore, the management decided to open the door of the incinerator and organized open days, on which the representatives and the inhabitants could go around the plant. The management informed local people about their future plans regularly on open forums. In addition, they distributed booklet about the operation of incinerator among the population and made quiz concerning environmental protection for local children. So after a while the social acceptance of the incinerator started to increase (Interview with János Csorba, the Managing Director of North-Hungarian Environmental Protection Ltd.).

Kovács and Kelemen also (2011) reported on a success story in the Danube-Dráva Cement Factory. Traditionally it was one of the most environment damaging factories in Hungary. After the political transformation in Hungary the environmental pollution largely decreased. However, in 2002 hazardous waste was begun to incinerate. Although it was a generally accepted custom in the European Union and it was authorized, the inhabitants made stout resistance. Therefore, its licence concerning hazardous waste was cancelled in 2003. The enterprise tried to convince the inhabitants by authentic data, but that was an unsuccessful attempt. Finally, a social controlling group was brought to existence. They prepared a very detailed environmental impact study, published newsletter, created green number. So finally, they retrieved the trust of local people and they could launch hazardous waste incineration technology again (Szántó, 2008 cited by Kovács – Kelemen, 2011).

We examined the waste management strategy of Tura. In the end of 1990s an EU-conform waste management system was introduced with a covered dump, a compost pile and a select hall. In the beginning the inhabitants did not know anything about selective rubbish collecting. It took almost two years to change the rubbish collection technology of the population. In the beginning the waste management company induced local people to rightly act by financial instruments. Since who did not want to collect rubbish in a selective way, had to order the collection of a second rubbish-bin, which had the same price as the collection of selective rubbish-bins for the whole year. Besides, the enterprise invited the population in small groups to discuss the way and the advantages of selective waste collection. In addition, they prepared a guideline and they published newsletters. They organised open days regularly, but usually there was only meager attendance at these programmes. The manager of the enterprise considered that the inhabitants could be convinced by small steps, but it did not work from one day to the next. Changes take time.

Conclusions

We have summed up results of some researches concerning environmental attitudes of inhabitants in this study. From the literature review it turned out it is difficult to draw conclusion concerning an effective opinion, a concrete action or behaviour. The attitude of population can be influenced by such internal and external factors like the information, the activity of civil organizations, the local political interventions, the participation in local decisions and the possibility of participation. The awareness, the system of values and the relations to environment of the society can be largely affected by the age, the educational level, the size of settlement, the position on the social ladder and the interest in ecological

problems. Living conditions, certain level of quality of life, different economic and other pressures are also determining factors.

It turned out from the case studies that involvement of the community was not equally taken into consideration in the course of decisions making concerning waste management. The investment was successfully carried out in those cases where the local community was involved in the preparation of decision making.

There are several methods for community involvement. Such methods are for example the formation of self-organizing movements, open individual or collective conversation with important local people, communal appraisal which survey and activate human, natural and economic resources or future search method. Communication with the community is also important, which can happen in different ways, e.g. website design, editing brochure and newsletters, run local tv and radio, creating forum, blog, etc. Plant visiting can be also an effective method.

The involvement of community and the creation of local partnerships can have several advantages. Local partnerships can be more efficient by using existing resources and bringing diverse interests together and they can also facilitate innovation, and strengthen integration. Partnerships are thought to be a more flexible mean of governance which is able to handle the special local problems by building trust among the representatives of different sectors (Kassai, 2012).

Stakeholder management can be also a way of community involvement. The essence of stakeholder management is that the interests of affected people are taken into consideration during the creation of corporate strategy. Those companies which use this method establish consciously their relations to the affected people. After identifying key actors such organisational solutions must be elaborated which can mediate the interests and values of parties to each other. It is important to involve the company in preparing decision making.

In the frame of project called 'Basic Research Development in the Pyrolysis Technology Research Center' implemented in Szent István University, our research group has made a questionnaire survey of opinions of the inhabitants concerning environmental awareness and energy consumption. We examine the social attitudes concerning waste management technologies and the extension of community involvement.

This survey partly corresponds with some previous surveys, so the measuring hopefully will enable temporal comparison. We will spread the questionnaire in printed and online version as well. Since in our opinion the online survey cannot reach the socially disadvantaged members of the society. In parallel, we will make interviews with the most important actors of the examined settlements. We will control the results of the questionnaire survey with focus group interviews and we will make recommendations. Our suggestions will be made regarding how to decrease hostile attitudes in general and increase the social acceptance of incineration technologies by the authentic information and the involvement of local community.

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