



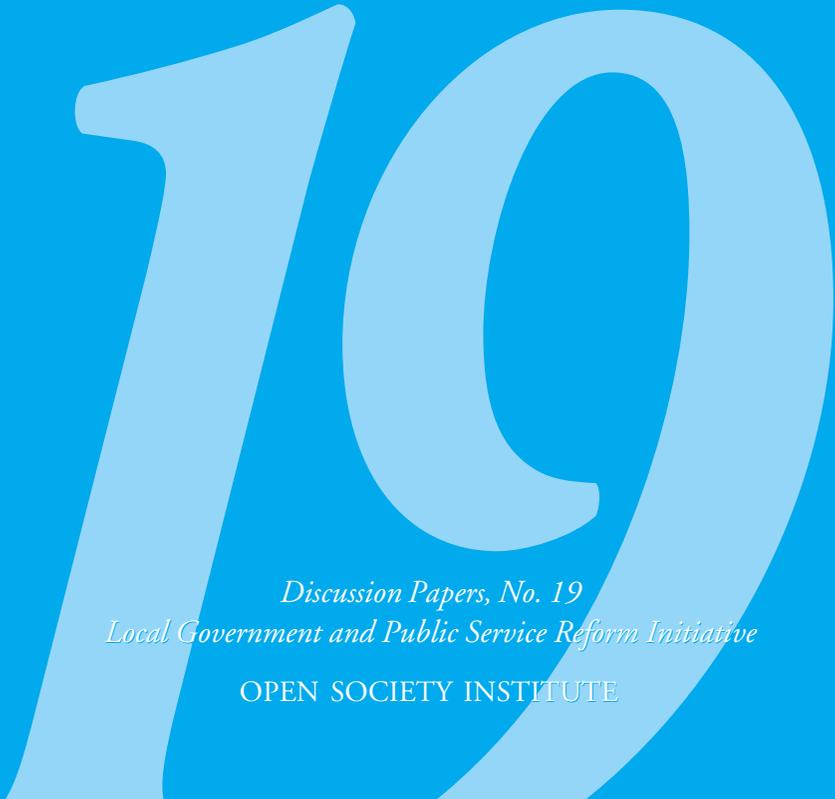
Local Government
and Public Service
Reform Initiative



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PUBLIC GRANTS & PRIVATE INVESTMENT IN
SOLID WASTE MANAGEMENT—ALFÖLD, HUNGARY

Paul Dax
József Fucskó
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Discussion Papers, No. 19
Local Government and Public Service Reform Initiative

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Introduction to the Series

The development of democratic and effective government at subnational levels remains one of the central tasks of transition in Central and Eastern Europe and the former Soviet Union. The sharing of expertise between countries can contribute significantly to the reform process in the region. Pursuing this goal, the Local Government and Public Service Reform Initiative (LGI) has launched a series of discussion papers, which will be distributed widely throughout Central and Eastern Europe.

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Table of Contents

About the Project and the Authors	8
Abstract	9
1. Background and Introduction	11
2. The Public Funding of Landfills in Hungary	14
2.1 The Targeted Support Program	15
2.2 Changing Criteria of the Targeted Support Program	16
2.3 The Central Environmental Protection Fund	16
2.4 Other Sources of Funding for Landfills	17
2.5 Implicit Strategy and Possible Alternatives	17
3. Public and Private MSWM Development on the Alföld	21
3.1 The State of MSWM on the Alföld: General Features	21
3.2 Meeting EU Landfill Standards	22
3.3 Lack of Regionalization Around Publicly-funded Landfills	25
3.4 Efforts at Regionalization by Private Investors	27
3.5 Costs and Cost Recovery	29
4. Recommendations	32
4.1 Introduction—The Slovak Experience	32
4.2 Recommendations on the Criteria for Government Support	34
4.3 Conclusions	37

Annexes

ANNEX I	38
Tables	38
ANNEX II	53
The Evolution of the Legal Framework for MSWM in Hungary after the Transition	53
Introduction	53
Hungary: Laws and Issues in MSWM in the Early Years of the Transition	54
The Case of a Useful Law in Budapest	57
Law XLIII on Waste Management	58
ANNEX III	62
Case Studies of the Two Major Strategic Investors in MSWM on the Alföld: A.S.A. and Rethmann	62
Case Study 1.: A.S.A. in Hungary	62
The Joint Venture AKSD Debrecen	62
Nádudvar	65
Hódmezővásárhely: A.S.A. Hódmezővásárhely Public Sanitation Kft.	65
The Gyál Landfill: a Case of a Private Initiative Clashing with a Public Monopoly	67
A.S.A.'s View on the Hungarian Solid Waste Market	68
Case Study 2: Rethmann in Szolnok and Environs	69
Introduction	69
The Tendering Process	69
Company Operations	71
Regionalization and Rethmann's Role in Kunszentmárton	72
Annex of Maps	76
Bibliography and References	80
List of Questionnaire Respondents and Interviews	84

List of Tables of Annex I

Table 1.1: Important Private Service Providers in MSWM in Hungary	38
Table 1.2: Beneficiaries of State Grants for Landfill Construction	39
Table 1.3: Classification of Landfills in the Study Area	42
Table 1.4: Investment and Financing of the Main Landfills in the Study Area	43
Table 1.5: Capacities and Utilization of Landfills in the Study Area	44
Table 1.6: Investment Costs and Population Served of the Main Landfills in the Study Area	46
Table 1.7: Waste Disposed in the Main Landfills in the Study Area	47
Table 1.8: Vehicles and Equipment in MSWM in the Study Area	49

List of Maps in Annex of Maps

Map 1: The Four Counties of the Study Area	76
Map 2: The Largest Towns in the Study Area	76
Map 3: Landfills with Majority Private Ownership	77
Map 4: Privately-operated Landfills	77
Map 5: Towns and Settlements Included in the Study	78
Map 6: Government Supported Landfills in the Study Area	78
Map 7: Settlements Served with Uncontrolled Dumps and Landfills which do not Meet Regulatory Standards	79

About the Project and the Authors

The Local Government and Public Service Reform Initiative (LGI) of the Open Society Institute, Budapest has launched a policy research project with the title “Opportunities and Constraints for Public Private Partnerships in Municipal Solid Waste Management (MSWM) in Central and Eastern Europe”. The project covers six countries: Bulgaria, Croatia, the Czech Republic, Hungary, Romania, and Slovakia. The overall objective of the research is an investigation of the factors that foster or inhibit the participation of the private sector in MSWM development.

This Discussion Paper is a joint product of the Institute of Environmental Strategies (IES), Sofia, Bulgaria and the Magyar Környezetgazdaságtani Központ (MAKK—Hungarian Environmental Economics Center) in Budapest, Hungary. IES is the overall project leader, and *Paul Dax*, Ph.D., IES’s Senior Advisor, is the overall project manager and the principal author of this Discussion Paper. From 1995 through 1998, he served as a financial advisor to the Ministry of Environment of Bulgaria, under a cooperative program between the Harvard Institute for International Development (HIID) and the United States Agency for International Development (USAID). During the course of this assignment, he conducted two study tours for Bulgarian mayors to Hungary to study public-private partnerships in MSWM.

József Fucskó, *Péter Kajner*, and *Gábor Ungvári* are Associates of MAKK. Prior to this discussion paper, they and *Gábor Bartus* had prepared a comprehensive descriptive study, “Opportunities and Constraints in Private Public Partnerships in Municipal Waste Management in Central and Eastern Europe—Private Public Partnerships in Municipal Solid Waste Management in Hungary.” The latter study had been preceded by an earlier paper, titled “Private Public Partnerships in Municipal Solid Waste Management in Hungary—Draft Inception Report”. This was also prepared by Associates of MAKK, *András Kis* and *Béla Hegyesi*. MAKK conducted the field investigation to this study, and the individual authors also contributed to the text. Gabor Bartus is at present a Deputy of the Government Commissioner for the Danube, and the director of MAKK.

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Abstract

In the early 1990s, in many Hungarian municipalities foreign strategic investors took the lead in the modernization of MSWM. In several cases, this included investment in the construction of modern landfills that met European Union standards. In the latter half of the decade, government programs increasingly funded, the development of EU-conform landfills, mostly through grants. By now, governmentally-funded new landfills, operated by municipal public enterprises, outnumber the privately developed landfills in Hungary by far.

This research paper examines the hypothesis that:

- (1) on the whole, governmental programs fostered inefficiencies in landfill development both in terms of cost effectiveness and location pattern, and
- (2) developments have not been accompanied by an overall modernization and enhancement of MSWM services in the beneficiary municipalities.

This study shows that the regionalization of MSWM services—proper economies of scale of regionalization being a hallmark of cost effective MSWM—was insignificant around the publicly-operated landfills in the study area. Regionalization was a strategic objective of the private investors who formed joint ventures with some of the major population centers in the Alföld region of Hungary. The government support programs favoring small and poorer towns – often in the radius of operations of private landfills—cut into the potential market of private operators and thus inhibited the regionalization of MSWM. In the process, far too many landfills were constructed in the study area. Moreover, governmental support programs may inadvertently have lead to the displacement of private investment in the Hungarian MSWM sector. The paper concludes with a number of recommendations for policy adjustments.

1. Background and Introduction

This research paper forms part of an applied policy research project funded by the Local Government and Public Service Reform Initiative of the Open Society Institute, with the title “Opportunities and Constraints for Public Private Partnerships in Municipal Solid Waste Management in Central and Eastern Europe”. The Project covers six countries: Bulgaria, Croatia the Czech Republic, Hungary, Romania, and Slovakia. The overall objective of the research is an investigation of the factors that foster or inhibit the participation of the private sector in Municipal Solid Waste Management (MSWM) development.

The importance of the topic for public policy is significant both at the local and at the national level. At the local level, MSWM is one of the major activities of local government. In most countries, this must be financed largely from its own resources. Enlisting private partners in modernizing the service shifts the initial burden of investment to the private partner, and can result in more cost-effective management.

At the national, “macro”-level, the costs of meeting the EU’s environmental standards in waste management are substantial. Next to air pollution abatement and waste water treatment, they constitute the largest costs of accession with regard to the environment. The potential to shift this cost to the private sector (and to foreign investors) is fiscally significant.

As landfill construction is the heaviest item in modernizing MSWM and in meeting EU standards, government policies tend to focus on landfill construction. The country studies under the project pay special attention to the impact of government policies on private investment in EU-conforming landfills. As it turns out, there are striking differences in government policies and in the private sector’s role in MSWM investment in the countries under study.

In the Czech Republic and Slovakia, there is no funding support from the central government for landfill construction. Yet these countries are furthest ahead in meeting EU requirements in disposal, largely because of private investment in the sector. These two countries pose examples of a favorable policy environment for public sector participation in MSWM.

Investment in modern landfill construction is just starting in Bulgaria and Romania. In Bulgaria, a few EU-conforming landfills have been publicly funded, but there has been no private investment. In Romania, however, a couple of landfills have been built by private investors. In these two countries, private investors made some inroads in modernizing the collection and transport service, but generally kept away from long term investment in landfills. Hungary’s experience represents a mixed picture. A dozen or so foreign strategic investors penetrated the MSWM market in Hungary in the early 90s, and also contributed

to the construction of the first modern EU-conforming landfills in the country. However, in the latter half of the nineties, massive grants from budgetary resources financed most of the new landfills, constructed mostly in relatively small towns and owned and operated by municipal public agents.

With regard to Hungary, this paper was preceded by an inception report and by a more wide-ranging study on the role of the government in Hungarian MSWM prepared by MAKK. Furthermore, a second research paper—still in draft stage—will follow the present research paper and will deal with the Trans-Danubian Region (Dunántúl).

The Dunántúl is economically a more advanced and prosperous region than the Alföld. With regard to MSWM, the Dunántúl has attracted more investors. Furthermore, the regionalization of MSWM is far more advanced in the Dunántúl: not just by private companies, but also by a number of dynamic public sector enterprises (i.e., Szombathely, Polgárdi, Kaposvár). The paper on the Dunántúl will focus on different aspects of MSWM modernization, and will examine the effect of regional competition in the MSWM sector with regard to the quality and the cost of the service in a setting where the private and public sectors coexist and compete for markets.

The focus of the paper is on landfill construction and the efficacy of state aid for landfill construction. During the latter half of the 90s, state aid for MSWM concentrated heavily on landfill construction. However, the scope of the paper is wider as it diagnoses a policy failure that arises precisely from the lack of integration between three key aspects of modern MSWM:

- (1) the modernization of the transport and collections system and its commercially viable management;
- (2) the regionalization of MSWM, and
- (3) the modernization of disposal, which in Hungary as in most transition economies still means the construction of modern landfills. The study thus examines the effects of State participation on the pattern of MSWM development in the study area.

The issue of efficiency can be approached from a number of aspects, namely:

- (1) in terms of the cost effectiveness of the individual investments;
- (2) in terms of the location pattern it has created (with reference to some optimal, or at least better, alternative location pattern);
- (3) in terms of allocating public resources to development activities which could have been financed from other (private) resources, and

- (4) in terms of whether government policy created conditions for market- based and commercially sustainable development for the beneficiaries of its support program.

These themes are interwoven in the text. The study is critical with respect to the effect on state aid in terms of the above measures of efficiency. Other issues such as the fragmentation of local government, social conditions, the citizenship's ability to pay for a higher level of service, and finally politics all impinge on the business climate but are not emphasized in this paper.

By way of institutional introduction, it needs to be mentioned that Hungary has a one-tier system of decentralized municipal government which roughly means that the smallest settlements—sometimes with a thousand inhabitants or less, have the same rights and responsibilities as large towns. (There are close to 3,200 municipalities (“települések”, which literally translates into “settlement”, which is used interchangeably with “municipality” in this paper.) In fact, many settlements are just smaller or larger villages to which the word “municipality” is a misnomer. The adverse effects of this extreme decentralization for public service management in areas which by their very nature require collaboration between municipalities because of their regional character and because of economies of scale—including MSWM and waste water treatment—have been often noted by critics.)

Under Hungarian law, municipalities have obligatory responsibilities for which they receive “normative” budgetary support, and non-obligatory responsibilities for which they don't, (and of which MSWM was one), until the recent passage of a framework law on waste management in 2000 (see below). This distinction had a profound effect on the evolution of MSWM and its financing, as well as on private sector participation in the sector. The fact that municipalities were left on their own to finance MSWM made them more receptive to offers from strategic investors than if the central government would have supported MSWM, as it does the “obligatory” functions in local government like in education and health. The evolution of the legal environment as it impacted MSWM development in Hungary is briefly described in Annex II, which also comments on the new 2000 waste law.

As in other transition economies, in ‘traditional’ MSWM, practically each settlement had its own dump. In Hungary, about 2,700 landfills and dumps were registered at the time of the transition. Most of these were unregulated dumps without any sanitary or environmental standards. In addition, there were countless unauthorized dumping sites in the countryside. Though policy statements frequently mention the need to close unsanitary landfills and recultivate them, in Hungary—unlike in neighboring Slovakia (see introductory paragraph in the Recommendations section below) there are no regulations—or financial incentives or disincentives—to attain this policy objective.

2. The Public Funding of Landfills in Hungary

While in the first half of the nineties, the first few modern, EU-conforming landfills were constructed under private auspices. A much larger number of landfills were developed with public funding sources during the second half of the nineties. Municipalities could receive support from a number of sources. The two main sources of such funding were:

- (1) the central budget's targeted support (céltámogatás)—these are annual allocations for investments projects submitted by municipalities for budgetary funding, and
- (2) support from the Central Environmental Protection Fund (CEPF).

Between 1992 and 1999, 63 landfills (and one transshipment yard) were built with government support, with a total grant funding of about USD 36.3 million. Twenty of these landfills received both targeted and CEPF support. The aggregate investment cost and grants of these support programs to date is summarized below:

Table 1
**Costs, Subsidies and Population of Applicant Municipalities
of Publicly-funded Landfills**

Funding Source(s)	Population of Applicant Municipalities [in USD thousands]	Investment Cost of Landfill Construction [in USD thousands]	Total Subsidy [in USD thousands]	Subsidy/ Investment Cost [%]
Both sources	1,075	27,368	19,345	85.4
Only targeted support	696	39,750	14,686	42.3
Only CEPF	1,728	11,613	2,316	24.7
Total	3,499	78,730	36,348	50.8

(It should be noted that the “population of applicant municipalities” refers to the combined population of the applicant settlements, not to the population actually served by the landfills. In actual practice, only a fraction of the settlements, which apply jointly, actually end up using the landfill, as the examples in the study area will show.)

2.1 The Targeted Support Program

During the period 1996 through 1999 the budgetary targeted program funded 45 landfills as summarized in Table 2 below:

Table 2
Landfill Funding through Targeted Grant Support

	1996	1997	1998	1999
Number of regional landfills built	19	12	10	4
Capacity of landfills [in thousand m ³]	—	3,316	5,177	1,607
Population of applicant municipalities [in thousands]	441	418	348	224
Total cost of investment [in USD thousands]	13,898	16,226	26,669	9,091
Amount of targeted subsidy [in USD thousands]	5,663	6,630	10,832	4,549
Targeted subsidy/total cost of investment	41%	41%	41%	50%

SOURCE: ÖKO Rt., 1999., Kormány közlemény, (Governmental declaration) 1996.

Of these 45 landfills, 20 also received CEPF support. (There were 18 landfills and one transshipment yard, which got only CEPF support without complementary targeted support). Thus, municipalities can—and in most cases do—apply for several sources of funding. It appears that about two-thirds of the new landfills built have received only one source of public support.

In some instances, the total costs of landfills have been financed by state grants from a number of sources (and there may be cases where the grants exceeded the cost, even though the terms of the application exclude this possibility). The coordination between the governmental funding agents with regard to project finance is very weak. For example, the joint venture landfill between several Dunántúl municipalities located in Polgárdi has received grant funding for the just about the total cost of its investment, patched together from several sources.

2.2 *Changing Criteria of the Targeted Support Program*

Targeted budgetary support for landfills has been available since 1993, however no applications were received that year or the next. As in 1995, the criteria included the stipulation that there is no other landfill meeting the standards within 20 kilometers, or—and this is a telling criterion—the population of the settlements exceeds 10,000 and at least one of the settlement's disposal sites endangers a vulnerable groundwater resource, or otherwise endangers health. Such loose criteria did little to avoid the construction of landfills in each other's vicinity, not to mention that the 20-kilometer distance and 10,000 population thresholds are far too small (see also the paragraph on transshipment yards in the "Recommendations" section of this paper).

With these criteria fulfilled, the maximum targeted support was 30%. If in addition the joint population of the applicant settlement exceeded 20,000, support can be up to 40%. And if, in addition, the applicant municipalities' population is individually less than 1,000, support can go up to 50%. There are at least 10 groups of settlements which received 50% targeted support (though clearly they were not composed entirely of small settlements; for example Szekesfehervar, a major county seat, also got about 50% grant support).

Four hundred and five settlements joined the 45 applicants that have been granted targeted subsidy, so the 45 landfills should serve 450 municipalities. This implies that in representative cases, nine or ten settlements applied together for a landfill. (This would have meant that about 14% of Hungary's settlements would have benefited from the program. About 2.8 million people, or about 27% of Hungary's population), would have been served by these landfills. However, the actual number to date will be far smaller—as the examples from the Alföld will show that, in more cases than not, only the host settlement makes use of the newly constructed landfill. Any coapplicants tend to fall by the wayside.

2.3 *The Central Environmental Protection Fund*

The CEPF funds projects up to 70% of investment costs. Grant funding is limited to 30% of costs, so that funding of over 30% is granted as interest-free or low-interest loans. However, in the case of landfills, in view of the availability from other state sources, the upper limit of grant support is 20%. The CEPF's current criteria for funding include:

- the absence of another landfill that meets standards within a 30-km radius;
- a combined population of at least 100,000 in the applicant municipalities;
- at least 10 municipalities apply jointly;
- none of the applicants has received a state grant during the previous five years.

The CEPF criteria for awarding grants thus conform closer to economic rationale. However, these stricter criteria developed only gradually. (In the case of the applications for the 1996 program, the population threshold was 10,000 and the distance from the nearest alternate landfill only 20 kilometers.)

Table 3 summarizes CEPF funding for landfills.

Thus, the total funding of landfills by the CEPF for landfills was much smaller than by targeted program—about 2.1B HUF between 1992 and 1999, compared to 5.8B HUF from the targeted support between just 1996 and 1999.

2.4 Other Sources of Funding for Landfills

In addition, to the two major source of support, landfills are also eligible investments from funds allocated by county level regional development boards.

In addition to these national sources of funding, PHARE supported two regional landfills with interest-free loans to the amount of USD 940 thousand in 1994. (One of these was the controversial Makó landfill, which receive a grant of USD 490 thousand, see below under Regionalization).

In the future, the EU's ISPA facility is seen as a major potential source of funding for MSWM, including landfill development. ISPA funding will also be available for private enterprises. Thus, AKSD Debrecen and Rethmann Szolnok have submitted applications for ISPA. (Szolnok's application includes the construction of the much delayed landfill near Szolnok, (see Annex III). Issues on the possible impact of ISPA funding on private investment are noted at the end of Annex III.)

2.5 Implicit Strategy and Possible Alternatives

What overall strategy if any emerges from the overall system of state support?

Hungary's targeted support programs favor less developed regions such as the Alföld, as well as smaller and poorer towns, reflecting the conscious distributive objectives of government policies. The targeted program is largely responsible for the proliferation of landfills in the smaller towns of the study area (and even more markedly in Northeastern Hungary, which is not a subject of this study).

Table 3
CEPF Funding for Landfills

Index	1993	1994	1995	1996	1997	1998	1999
Number of regional landfills built	11	4	3	5	13	5	3
Capacity of landfills [in million m ³]	598	1,221	370	1,385	4,032	1,209	1,758
Population of Applicant Towns	79,460	97,350	82,725	1,544,384	626,372	113,500	414,500
Total cost of investment [in USD thousands]	923	2,520	869	4,078	14,543	3,943	8,844
Amount of CEPF subsidy [in USD thousands]	218	532	246	707	3,101	933	2,461
CEPF subsidy/total cost [%]	24	21	28	17	21	24	28
Applicant population/landfill [capita/landfill]	7,224	24,338	27,575	308,877	48,182	22,700	138,167
Investment costs/landfill [in USD thousands]	83	630	290	816	1,119	789	2,948
Average capacity/landfill [m ³ /landfill]	54,404	305,250	123,640	277,000	310,117	241,800	586,000
Investment cost/resident on average [USD/capita]	11.6	25.9	10.5	2.6	23.2	34.7	21.3

SOURCE: Adatok beszerzése Magyarország hulladéklerakóiról. Környezetgazdálkodási Intézet Környezetvédelmi Intézete (KGI), Budapest, 1999.

Data on the 64 landfills supported by State aid (Targeted- and CEPF-supported) shows the following size distribution (See Table 4).

Table 4
Size Distribution of Applicant Population in Landfill Subsidy Allocation

Applicant Population	Number of Landfills
Less than 30,000	40
30,000–50,000	10
50,000–100,000	8
Above 100,000	6
Total	64

In fact, the “applicant population” far exceeds the population actually served by these landfills, as will be seen in the case of the Alföld. In most cases, only a few of the applicants end up using the landfill, and in some cases only the sponsor municipality ends up as the sole user.

This is related to a policy gap; the support for new landfills has, to date, not been accompanied by a policy of closing down local dumps that do not meet any sanitary or environmental requirements. The settlements that have co-applied for landfill are not under any pressure to use the new landfill, and are content to continue to use their existing dumps instead of hauling waste over a greater distance to the new landfill. This in turn reduces capacity utilization even further.

Most of the landfills were planned for far smaller population clusters than could conceivably meet standards of efficiency. According to the data, on average only about 30,000 people would be served by a landfill if all the applicant municipalities would actually use it. Extrapolating into the future, the present approach of funding landfills for such small population clusters would mean that several hundred landfills would need to be constructed to service the entire nation. This would be far too many given Hungary’s population pattern, surface area, and generally flat topography.

Strategic investors most often cite a population of 100,000 and a 50-kilometer radius of operation as minimum ballpark figures for an efficient landfill operation. However, the optimum size is regarded as larger, depending on the development of the road system, topography, population density and living standards.

Finally, there is no real coordination between the various sources of funding in terms of the “left hand” (the targeted support program) knowing what the “right hand”, (i.e., the Environmental Fund) is funding. This naturally results in uneven allocations of grant funding. Adroit municipalities could thereby obtain practically total financing of their landfills.

Another symptom of the lack of coordination is that the criteria for targeted grants did not keep pace with the increasingly strict criteria of the CEPF so that landfills that failed to meet the CEPF’s more rational criteria could still qualify for the targeted support. All this leads to perceptions that allocations may be awarded as much on the basis of political connections as on economic considerations.

The National Environmental Program 1997–2002 has some statements that sound like policy. (It pronounces that ten to fifteen EU-conforming landfills need to be built per year, with an annual total capacity of 2,000,000 m³, and that noncompliant landfills should be closed and recultivated. But there are no real policy or instruments backing up these loosely-stated intentions yet (see Annex II). In fact, if the radius of operation as per the CEPF’s criteria were observed, no more than 30 landfills would fit into Hungary. (By way of comparison, the Netherlands, a country with a greater population than Hungary, has only 15 landfills.)

At this point, one might speculate about a fairly obvious alternate policy for landfill development. Hungary has some 20 towns with populations over 50,000 which, together with Budapest, account for about half of the total population. Regional landfills operating around just these major population centers could achieve a very large percentage of coverage of the population. An alternate policy would have accorded priority to the larger towns to construct new landfills, and to regulate/give incentives for the development of regional operations around these larger towns.

Such a policy would cover a far larger portion of the population at a much lower cost. And such an alternate strategy could be pursued through “command and control” measures and subsidized funding, or alternately by relying on incentives to private investment, as in the Czech Republic or Slovakia. But it is largely moot to discuss such alternatives, as Hungarian policy never got beyond the fairly random subsidization of far too many and far too small landfills.

3. Public and Private MSWM Development on the Alföld

3.1 *The State of MSWM on the Alföld: General Features*

The geographical scope of this paper consists of four of Hungary's 18 counties shown on the title page, in the southeastern quadrant of the country. (This is not the entire Alföld region, as it excludes the large country of Bács-Kiskun and areas of Pest County and parts of other counties which also form part of the Nagy-Alföld ("Great Plains").

Table 5
The Four Subject Counties of the Study

County	Population	GDP/Capita USD	Largest Towns	Population of Towns
Hajdú-Bihar	546,000	2,483	Debrecen Hajdúböszörmény	213,000 32,000
Jász-Nagykun-Szolnok	417,000	2,404	Szolnok Jászberény	81,000 29,000
Békés	399,000	2,433	Békéscsaba Gyula Orosháza	67,000 34,000 34,000
Csongrád	422,000	2,958	Szeged Hódmezővásárhely Szentés Makó	173,000 50,000 33,000 27,000
Hungary Total	10,135,000	3,178		773,000

SOURCE: A települési szilárd hulladékgazdálkodás jelenlegi gazdasági és társadalmi feltételrendszerre. Az Országos Hulladékgazdálkodási Terv megalapozó tanulmánya. ÖKO Rt., 1999.

In the early years of political transition, Hungarian municipalities attracted a dozen or so significant foreign strategic investors in MSWM for the modernization of related services. (A list of the most important strategic investors and their projects is shown in Annex I, Table 1.)

While private investment concentrated on the more prosperous areas around Budapest and in the Dunantul region, a couple of pioneering joint ventures between strategic investors and major municipalities took place on the Alföld.

ASA's (see Annex III.) investment with Debrecen, Hungary's second largest city (population 210,000) replaced the large and obsolete vehicle fleet of the municipal company with ten modern compactor trucks, and constructed a large modern landfill that fully complies with EU standards. Later, A.S.A. made similar investments in Hódmezővásárhely (see Map 3). A.S.A.'s landfill investments are exceptional in that the company received no financial support from central government sources.

The German company Rethmann was the second most important private investor in the Alföld, in a joint venture with the town of Szolnok (population 80,000). While Rethmann's investments so far do not include landfill construction, it has been pioneering in other respects. It was one of the first professionally tendered joint ventures in MSWM in the country. It is also one of the few cases where a private company directly collects fees from the population, and where the service is largely self-financing.

Case studies of A.S.A.'s and Rethmann's activities on the Alföld are attached in Annex III of this paper.

Public funding for landfill construction took off in the latter half of the 90s. To date, 12 landfills have been constructed in the study area at a total investment cost of about USD 20.8 million, of which public funding accounted for 7.0, or about 34% (see Annex 1, Table 1.4). The capacities of landfills in the study area and the amounts of waste being disposed in them are shown in Table 1.5. This table furnishes indicators as to the investment cost per capacity created, and the investment cost per population served.

Public investment policy in Hungary has accorded preferential treatment to less developed regions. As such, the Alföld received a disproportionately large share of public funding for landfills. From a total of 64 publicly funded landfills, 12 are in the study area.

Before analyzing the landfills on the Alföld in terms of the hypotheses stated in the synopsis, a brief survey of the evolution of state aid for landfill construction follows:

3.2 Meeting EU Landfill Standards

The CEPF's criteria for funding landfills specifically refer to European Union norms: only such landfills are to receive funding which constitute a contribution towards accession. The items of EU conformity are many, and the below discussion is limited to some of the major items:

- An EU-conforming landfill is lined with plastic liner;
- It has an internal drainage system leading to a leachate pond;
- Monitoring wells adjoining the site are to be installed to regularly monitor ground-water quality;
- Provision for the extraction of methane is included in the norms;
- The landfill directive also prescribes monitoring of the quantities and qualities of waste; and therefore a weighing station at the entrance of the landfill. (The weighing station, other than for monitoring, is also an indispensable instrument for cost recovery as incoming trucks are charged related to weight. The principle of cost recovery is incorporated in the landfill directive.)

(Table 6 summarizes the data obtained by questionnaire on the landfills in the study area.)

It appears that all the state-funded landfills generally meet some of the basic EU requirements, namely, lining, provisions for internal drainage with leachate pond, and groundwater monitoring. However, answers in the questionnaire were obtained in the “yes” or “no” mode and hide qualitative differences. Site visits reveal that A.S.A.’s Debrecen and Hódmezővásárhely landfills and the Békéscsaba landfill operate with the higher levels of technology. But the Debrecen landfill is the only one to extract methane, which it sells it to a local plant.

Furthermore, in Debrecen and Békéscsaba, sludge from the WWTP is used to mix in with organic waste materials to produce compost. This is used in the eventual covering and recultivation of the landfill site.

Leachate treatment is a problem area, with many of the leachate ponds being too small. The EU-recommended practice of sending leachate to WWTPs for treatment is not followed. In a number of landfills, leachate is pumped onto the wastehill to hasten decomposition.

A compactor is an essential piece of equipment for modern landfill operations. Once the heavy investment in a lined site is incurred, the economical use of the capacity created requires that the incoming waste be compacted. (The compactor is the most expensive piece of equipment in landfills, and many municipalities forego investing in it, even if in the long run this leads to wasteful use of the landfill.)

The fact that some of the smaller settlements which received grant-funded landfills (Kevermes, Nagykőrű, Újkígyós) have no compactors is *prima facie* evidence of the inefficient use of expensive landfill space. On the other hand, it is understandable, that, in view of the small quantities of waste handled by these landfills, the municipalities are reluctant to invest in an expensive compactor that would again not be cost effective on the basis of the quantities handled.

Table 6

Key Technical Features of Landfills on the Alföld

Settlement	Plastic Sealing	Drainage, Leachate Treatment	Ground-water Monitoring	Fencing	Weighing Station	Compactor	Other Earth Moving Engines	Landfill Gas Treatment	Permanent Staffing
I. Publicly-operated landfills which have not received state support									
Gyula	No	No	Yes	Yes	No	Yes	Yes	No	Yes ¹
Szeged	No ²	No ²	Yes	Yes	Yes	Yes	Yes	Yes	Yes ¹
II. Publicly-operated landfills which have received state support									
Békéscsaba	Yes	Yes ³	Yes	Yes	Yes	Yes ⁴	No	Yes ⁵	Yes ⁶
Dombegyház	Yes	Yes.	Yes	Yes	No	n.a.	n.a.	No	No ¹
Karcag ⁷	Yes	n.a.	n.a.	n.a.	n.a.	Yes	n.a.	n.a.	n.a.
Kevermes	Yes	Yes	Yes	Yes	No	No	Yes ⁸	No	Yes ⁹
Nagykőrű	Yes	Yes	n.a.	n.a.	n.a.	No	n.a.	No	n.a.
Szentes	Yes	Yes ¹²	Yes	Yes	Yes	Yes ⁴	n.a.	No	Yes
Újkígyós	Yes	Yes	Yes	Yes	No	No	Yes ¹³	No	Yes
III. Privately-operated landfills which have not received state support									
Debrecen	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hódmezővásárhely	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No ¹¹	Yes
IV. Privately-operated landfills which have received (or will receive) state (or other) support									
Makó	Yes	Yes ⁷	Yes	Yes	Yes	Yes ¹⁰	No	No ¹¹	Yes ¹
Kunszentmárton	Yes	Yes	Yes	Yes	Yes	Yes ⁴	Yes	No ¹¹	Yes ¹
Nádudvar	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes ¹
Szolnok	No	No	Yes	No	No	Yes ⁴	Yes	No ¹¹	Yes ¹

- 1 Permanent staffing at the site is based on such hallmarks as fencing around the site, receiving yard, reception with a good infrastructure etc. In other cases, we have firm information from the interviews.
- 2 Only a part of the landfill.
- 3 According to the provisions before the landfill construction, the leachate is either pumped back onto the waste hill, or taken to a WWTP.
- 4 According to the answers to the questionnaire, some kind of waste compacting machine is deployed, but it may only be a simple bulldozer or other earth moving machine.
- 5 It is flared.
- 6 A permanent staff of 8 persons.
- 7 According to the provisions stated in the application for state grant.
- 8 A T-100 tractor.
- 9 24-hour security.
- 10 Probably, this is a compactor, and not a simple earth moving machine.
- 11 Provision.
- 12 The leachate is pumped back on the waste-hill. The leachate pond is too small, and causes pollution during heavy rains.
- 13 A T-100 tractor.

The absence of weighing stations in some of the smaller landfills reflects the absence of cost recovery policies, as no tipping fees are charged. Tipping fees are typically applied to industrial waste in contracts between private operators and industry. However, most of the publicly operated landfills do not charge tipping fees. (For household waste, the weighing station only serves the function of record-keeping, which is also an EU requirement.)

3.3 Lack of Regionalization Around Publicly Funded Landfills

Regionalization is a hallmark of modern MSWM, and strategic investors such as A.S.A. and Rethmann have from the start set themselves the goal of expanding their operation beyond

the host municipality to neighboring settlements. In fact, the economies of scale of modern landfills require regional operations for enhancing the cost-effectiveness of MSWM.

In recognition of this principle, the criteria for receiving government support prescribe that the landfill must be regional, interpreted as meaning that at least two settlements must join in the application. However, while this mandatory stipulation is being met *pro forma*, in fact the signatories do not necessarily all contribute to the financing of the landfill—or, for that matter, use the landfill jointly once it is commissioned.

There are also examples of settlements which had coapplied with sponsor municipality for government grants actually contracting out the transport and collection to a private investor. For example, a number of the applicants for the Makó landfill have contracted the service to A.S.A. and use the Hódmezővásárhely landfill at a distance of 30 kilometers. (The Makó landfill—funded by PHARE through the Central Environmental Fund—was a conspicuous example of a grant-funded new landfill cutting into the potential market of an already existing private regional landfill operator, (see further below and also in Annex III) .

Concerning the settlements served by the government supported landfills, in 44% of the cases only the host settlement is served by the landfill. In another one-third of the cases, the quantities of waste brought in from other municipalities is sporadic or insignificant. Thus, the publicly-funded landfills are falling far short of meeting the objective of regionalization. Thus the settlements within the intended sphere of operation of the newly constructed landfills continue to use their “traditional” local dumps, which generally do not meet any sanitary or environmental standards.

The reason for the absence of regional cooperation becomes understandable in terms of the transport and collection methods generally employed by Alföld municipalities and the settlements, which in turn point to their financial constraints. Regionalization of MSWM is only viable with modern transport vehicles, which can haul large quantities of compacted waste over longer distances in a cost-effective manner.

Questionnaire responses regarding the transport and collection systems of the Alföld municipalities which are the subject of this study revealed that, on the whole, the fleets of public operators have not been modernized, particularly in the smaller settlements where new landfills were built with public funds. In Annex 1 summarizes the available data on the equipment and containers used in the transport and collection of waste in those municipalities which have received government grants for landfill construction. Most work involved obsolete equipment hauling small quantities per vehicle of uncompacted waste to the local landfill. The cost of hauling waste with such equipment over longer distances is prohibitive. Thus, the settlements which do not have the funds for the modernization of their vehicle

fleet are constrained to use their local dumps, instead of the newly developed “regional” landfills.

Some of the grant recipients in the study area have no organized collection and disposal system at all, or have just rudimentary services which serve only a part of the population (Kevermes, Újkígyós, Dombegyház).

3.4 Efforts at Regionalization by the Private Investors

The experience of A.S.A. and Rethmann, the two major strategic investors in the region, has not met their initial expectations. Both companies have found a number of contracts with nearby municipalities (see Annex 1). However, these contracts still constitute a relatively small share of their business, and there are many more settlements in their potential sphere of operations which either carry out their MSWM in the low-cost “traditional” way (i.e., using their local dumps and providing minimal or no service, or have their own publicly financed new landfills.)

The managers of both companies have, privately and publicly, expressed their dissatisfaction with the government policies of subsidizing landfills in their potential area of operations, thus in effect depriving them of the markets they had been counting on. A.S.A. has publicly protested the construction of the landfill at Mako, pointing out that government policies displace private investment, and have even threatened to withdraw from the Hungarian market.

The new landfills of Nádudvar (see Annex of Maps) and Karcag also fall within the potential radius of operations of A.S.A.’s Debrecen landfill. Szentes and Kunszentmárton (see Annex of Maps) could be serviced by Rethmann, though this is a different case, as Rethmann has not yet constructed a modern landfill to service Szolnok itself.

In the end, in a couple of instances, the strategic investors seem to have adopted a policy of “if you can’t beat them, join them”. In Kunszentmárton (population: c. 12,000), the municipality ran out of funds before being able to complete the construction of its landfill and issued a tender with the conditions that the winner will put up the required financing. They will thereby have the right to operate the landfill as well as the transport and collection service. Rethmann eventually won the tender, and now has direct contract with Kunszentmárton according to which the municipality pays Rethmann a lump sum. Rethmann, however, subcontracts the collection to a local private contractor. In this roundabout manner, Rethmann made strides in pursuing its regionalizing strategy.

Similarly, AKSD ended up operating the publicly funded Nádudvar landfill, as well as the municipality's transport and collection service, thus also adding to its effective area of operation. The contract was bid in open tender. AKSD operates the landfill directly, but subcontracts the collection and transport to a contractor, who in turn rents a vehicle from AKSD (see Case Study 2).

In the controversial Makó case, which was so sharply attacked by A.S.A., the landfill operation was awarded by tender to Becker Pannonia, a smaller German-owned private operator that manages several landfills in Hungary. A.S.A., in view of the "bad blood" surrounding the case, did not participate in the tender. The Makó operation remains strictly local for a small population of 27,000 people, although the operation has started recently, being 30 kilometers from the large public landfill in Szeged, and 28 kilometers from A.S.A.'s in Hódmezővásárhely.

For completeness' sake, there is a fourth private operator in the study region. Békéscsaba, the largest town in seat of Békés County, has issued tenders for the collection and transport of waste, separately for its districts: an exceptional occurrence in Hungary. The German-owned company Tappe won a contract in two of Békéscsaba's districts, while Békéscsaba's own municipal company won the tender in the remaining districts of the town. In late 2000, Békéscsaba issued a new tender, and Tappe was awarded the entire service. (Tappe also operates a landfill in Jászberény, also in the study area.)

In summary, government supported landfills represent a policy failure with respect to the objective of regionalization. The financial constraints of the Alföld municipalities which operate the publicly subsidized new landfills generally constrain them from modernizing their equipment, so that regionalization by public sector companies (such as has taken place in the Dunántúl: for example, in Szombathely and Kaposvár) is absent on the Alföld. Moreover, no public sector municipal company on the Alföld is making any effort to extend its operation regionally. Regionalization is only slowly and haltingly taking off under private auspices, inhibited as it is by the sprawl of publicly subsidized landfills and the non-closure of the old dumps and sites.

It is tempting to speculate what would have happened. On the Alföld, as in other regions of Hungary in the absence of the government grants. Certainly, the serious strategic investors who made their appearance in Hungary in the first years of the transition have had more ambitious plans than were realized, and they do blame the government-subsidized landfills for limiting their market prospects. They are also concerned about the lack of any government policies for the closure of unregulated dumps, which raises their risk and inhibits their market. Certainly, the government programs have resulted in a different pattern of landfill location and density than would have taken place under private auspices.

Private investors seek out large population centers to provide the critical mass for their operation, as the central point from which they intend to spread out regionally. Left to market forces, it is probable that strategic investors would have sought out more of the larger towns on the Alföld to create similar joint ventures as were formed in Debrecen, Hódmezővásárhely, and Szolnok. Towns such as Szeged, Békéscsaba, and Gyula did have offers from private investors in the early 90s. However, the conscious government policy of favoring poorer, smaller, and more settlements has distorted location in the opposite direction. As it happens, some of the larger towns on the Alföld still have quite rudimentary and unacceptable disposal facilities, while very small settlements sport modern EU-compliant landfills, reflecting the conscious policy of subsidizing development in smaller and more backward settlements.

3.5 *Costs and Cost Recovery*

In comparing the costs and charges of MSWM in public-private partnerships versus municipal companies, two factors work in the opposite direction. The private companies need to recover the investment they incur in landfill construction and in modernizing the equipment. This raises their costs relative to publicly operated municipal companies, which tend to operate with older and fully amortized equipment, and have not invested in new landfills. To the extent that the landfills are financed by grants, municipalities are under no pressure to recover their cost. On the other hand, the operating costs of the private companies are lower, in large part due to a smaller number of efficient vehicles operating at much lower unit costs.

In Debrecen, eight large compactor vehicles provide the basic service for a population of about 250,000. In the smaller city of Szeged, more than ten vehicles are at work. For these, the two largest cities in the study area, this is perhaps not a dramatic illustration of the relevant differences. However, both at Gyula (public companies) and at Hódmezővásárhely (private) six compactor vehicles each are used, although the population is only 35,000 and 108,000 respectively. Békéscsaba (public) used five compactor vehicles to service a population of about 67,000. Public municipal companies not only tend to use larger (and older) vehicle fleets per population served, they also tend to have much larger staffs and overheads.

Beyond the differences in actual cash operating costs, private and public companies have different philosophies and practices when accounting for non-cash expenditures. These result in differences in the costs as accounted for. First, and obviously, private companies expect a profit on their operations. This means that profits are a normal component of the “costs” that they seek to recover from their client. Profit generally does not enter the calculation of public enterprises; municipalities are generally content if they break even.

Second, as mentioned above, private companies show high amounts of amortization, both on the newly constructed landfills in which they have invested, and on the modern equipment they have to depreciate. Public companies who have received grants for landfills do not need to show amortization/depreciation on their books for the landfills. Further, their equipment is older and often fully amortized, so depreciation on equipment is smaller or zero.

Table 7 below attempts to shed light on the costs of MSWM companies in the six largest towns in the study area, three of them public, the other three private. As cost data are not readily available, the revenues of these companies, being the cost to the population served, may be interpreted as a surrogate for costs.

Table 7
Revenues of the Six Major MSWM Enterprises in the Study Area

Town	Revenues and Per Capita Expenses* (1000 USD, 1998)						
	Total revenue of waste collection and disposal charges				Municipal Budget Subsidy	Total	Imputed /Capita Expense
	From Population	From Industry	Others	Total			
I. Publicly-operated landfills which have not received State support							
Gyula	214	171	92	477	0	477	6.2
Szeged ²	1,645	526	0	2,170	50	2,220	8.9
II. Publicly-operated landfills which have received State support							
Békéscsaba	363	435	0	799	0	799	5.4
III. Privately-operated landfills which have not received State support							
Debrecen	1,200	1,000	0	2,178	1,300	3,478	9.4
Hódmezővásárhely	307	299	0	606	380	986	6.4
IV. Privately-operated landfills which have received (or will receive) State (or other) support							
Szolnok	635	678		1,313		1,313	6.3

On the assumption that industrial waste management is profitable, and that the municipal payments (in Debrecen and Hódmezővásárhely /A.S.A.) go to support the household waste service, the “billed” expense per capita is calculated as the sum of revenues from the population, plus the municipal subsidy, divided by the service population.

For the private companies, this cost contains a significant element of depreciation (i.e. a cash source for the company) as well as profit. For the public companies—as mentioned above—these cost elements must be much less, if any; none have significantly invested in landfills, and their equipment tends to be amortized.

Debrecen and Szeged, the two largest towns in the study area, show very similar imputed costs. The inference may be drawn that higher amortization and profits in Debrecen are more or less offset by lower operating costs. The smaller towns of Békéscsaba (public), Gyula (public) and Hódmezővásárhely have similar costs, and significantly lower than the big two. Hódmezővásárhely’s landfill was privately financed and operates region-wide. Békéscsaba’s landfill, developed by public funds, only serves the town. Gyula operates an old landfill that also serves only the town. Szolnok (Rethmann) has not yet invested in a landfill. But if it does, costs are expected to go up to similar levels as in Debrecen (see Annex III).

These data are rather inconclusive in terms of comparing the cost effectiveness of public versus private sector performance. What does stand out is that A.S.A.’s case the households’ service is subsidized; the cost of the investments was not passed on by the two municipal councils to the population. The three public companies appear to cover their costs from revenues, and so does Szolnok, where Rethmann collects the fees from the population and receives no subsidies from the municipality. These last four have no new landfills. .

Municipal companies in the larger towns on the Alföld, as elsewhere in Hungary, provide relatively high levels of service in transport and collection, comparable to the private companies who have entered the field. However, none of them have invested significantly in their landfills. Would they do so, and would they have to amortize these costs, they would have to raise charges (i.e. revenues from the population as in Table 7) or introduce subsidies—unless future investments in these landfills would again come as grants.

But the government subsidies went not to the bigger towns shown in Table 7, but to relatively small ones, as part of national policy, and here is where the inefficiencies stand out. In the two that are operated by private companies (i.e., Nádudvar by AKSD, and Kunszentmárton by Rethmann), collection and transport are privately organized. And the municipalities are making efforts at cost recovery as described in Annex III.

However, for the smaller municipalities which have received grants for landfills, the overall financial and fiscal picture is generally bleak. Transport and collection services are mostly rudimentary, and carried out with old inefficient equipment. In some cases, there is a modern landfill but no organized service at all (i.e., Kevermes) or only a fraction of the population receives some municipal service (i.e., Újkígyós). Since the amount of waste handled by the new landfills is very small, unit costs are very high, so that there is no point in even considering the recovery of landfill investment via user charges. In some of these settlements, there is no charge for MSWM or for the use of the landfill (i.e., Kevermes, Újkígyós). In others, charges are very low.

In summary, most of the smaller municipalities which are beneficiaries of government support programs for landfills carry on MSWM with obsolete management, do not make a fiscal effort to raise fees or otherwise invest in the modernization of the transport and collection of equipment. It is business as usual in “traditional” MSWM; some settlements have their own service staff, some of them have none. Waste is deposited with obsolete equipment—or by the population itself—in the local dumps. “Service” such as it is, continues to be provided “free” or at very low rates. Thus in most of these small grant recipients, the presence of newly constructed landfills has not set into motion complementary developments for the modernization and regionalization of MSWM.

Interviews with municipal MSWM managers reveal a tendency to hide behind lofty socio-economic philosophies—hearkening back to the planned economy—for the reluctance to raise fees or to invest in modernizing MSWM, (or for that matter, to invite private participation in MSWM.) Thus, the vicious circle of obsolete equipment and methods resulting in rising costs and lowering service levels perpetuates itself. The fact that now these settlements are the recipients of modern landfills has changed the overall state of MSWM in the target communities very little.

4. Recommendations

4.1 *Introduction—The Slovak Experience*

Slovakia, in contrast with Hungary, decided on a policy of closing down most traditional village dumps early on in the transition. As early as 1992, over 5,000 dumps were surveyed, and most were ordered closed by administrative decree. By 1995, only about 500 landfills were permitted to operate. These were officially categorized into those meeting Slovak stan-

dards (closely modeled on EU standards), and those that did not. In 1995, those that did not numbered about 400; they were operating under temporary permit, under the condition that they be upgraded later. By 1995, there were thus about 100 landfills, which did meet the standards, up from only one in 1992.

Thus the striking fact is that during the first half of the decade, Slovakia managed to invest in about 100 landfills, bringing them up to near EU standards. (One hundred is actually too large a number of EU-standard landfills for the size and population of Slovakia. But many of these are industrial landfills operated by individual companies. The others represent mostly investments by private investors, most of them foreign.)

The enforced policy of closing old dumps provides a strong incentive to private investors, as it puts an end to local government's preferred practice of continuing to use dumps just outside the town limits. However, Slovakia also introduced a powerful economic incentive that led to private investment. A punitive surcharge was served on the operators of landfills that do not meet the higher standards. This surcharge was calculated to equalize the cost of operating a "new", versus an "old" landfill. As the municipalities were themselves the operators of the landfills subject to the charge, they now had every incentive to invite private investors to construct or upgrade landfills.

Thus, and in contrast to Hungary, landfills became the main target of private investment. Also by contrast to Hungary, Slovakia did not fund or otherwise subsidize landfill construction. Policy relied on a combination of regulation—the closing down of dumps—and an economic instrument—the surcharge on old dumps.

Given the contrasting experience of Hungary, as highlighted in this paper, two kinds of recommendations suggest themselves:

- (1) systemic policy recommendations, for example recommendations to the effect that Hungary should adopt policies similar to Slovakia's, or
- (2) "second-best" recommendations, which take the general policy framework as it is, then offer suggestions for improvements on the margin.

Systemic recommendations run the peril of falsely assuming that policies and practices are freely transposable from one type of economy to another. Thus the suggestions below deal with some of the more obvious shortcomings of the Hungarian system which could be corrected "at the margin".

For recommendations not to be sterile, they should have some chance of actually being adopted by the relevant policy makers. There is considerable uncertainty as to which direc-

tion Hungarian policy on MSWM is heading. The new law on waste management has recently been approved by parliament, but it can be designated as a framework law which as yet does not concretely address the issues that are addressed in this paper, [e.g. the norms and criteria under which support is awarded for municipal landfill construction (see Annex II)]. The as-yet-undefined direction of policy may be an opportunity for promoting better present policies and practices.

4.2 Recommendations on the Criteria for Government Support

(i) Joint Commitments and Commercial Undertakings

The criteria for awarding grants rightly stipulate the regional use of landfills. However, as described in this treatise, a *pro forma* declaration of municipalities to cooperate in the future use of a particular landfill suffices to meet this condition. The CEPF from there on is solely concerned with the technical features of the landfill to be built, without paying heed to the legal or business aspects of cooperation. Furthermore, with regard to financial contributions, only the host municipality contributes funding to the landfill—the neighbouring municipalities that are also beneficiaries are not obliged to make any commitments. As seen on the Alföld, the result is that only the host municipality ends up using the landfill, (for reasons outlined above in the section on regionalisation). There is no attempt to enforce—or give any economic incentives or disincentives for noncompliance—to ensure that regionalization actually happens in public sector services operated under MSWM.

Various measures that could improve the effectiveness of state aid programs suggest themselves.

First,—and most evidently—if municipalities submit joint application, they should make joint commitments, as well. All of them should be required to commit to the counterpart funding of the landfill. The application should contain a business plan, in addition to merely technical feasibility studies, to which the applicants would jointly subscribe. (Any business plan should include a financing plan for the landfill and—of course a proposed ownership structure. A joint ownership structure may be determined in terms of the share contributions of the participants, which in turn may be related to population served or waste generated.) For the operational phase, the business plan would forecast the operational costs of the landfill, and how these costs will be jointly met by the collaborating municipalities. The

revenue forecasts would naturally include the contributions that each municipality would make to the costs of the operation (derived from charges on the population, budgetary support, or otherwise). They would also estimate the revenues to be derived from tipping fees levied on industry and other direct users of the landfill, and spell out the conditions on which other municipalities which were not participants in the original application could later join.

All this of course implies a “capitalist” approach to MSWM in which the service is to be operated as a commercial operation. Such a commercial approach remains alien to many MSWM managers in transition economies who remain steeped in the traditions of the planned economy and continue to regard MSWM as a public service that should be subsidized. Nurturing a more commercial approach to MSWM ought, however, to be part and parcel of any “conditionality” of state aid. As happened on the Alföld, the grant program being implemented has not fostered a businesslike, more commercial approach to MSWM by the recipients.

On the contrary it can be argued that tendencies towards *autarchic* MSWMs are being abetted by state aid. Not only are the neighbouring municipalities reluctant—because of obvious cost considerations—to bring their waste to the new landfill, the host municipality receiving the grant is interested in keeping its capacity for its exclusive use for as long as possible. The grant programs relieves pressure on municipalities to seek private partners or to make a greater fiscal effort by means of raising user charges to finance the modernization of MSWM. They also lack the financial means to modernize their equipment, which would normally be a precondition for expanding regionally. But perhaps equally important are attitudes which regard MSWM as a social service to be provided by the state on a subsidized basis, and the lack of a commercial attitude among local decision-makers—which the present government policy in the field is not designed to change.

(ii) *Policies to Close Old Dumps*

In addition, it would of course be useful if the joint applicants would commit themselves to close their own dumps once the new landfill is commissioned. As yet, Hungary has no policies to close or penalize the use of unsanitary landfills (in contrast to Slovakia). The new framework law merely requires all municipalities to submit to the environmental inspectorates a report on their landfills and its conformity to environmental norms by 2003. In the interim, at least in those cases where the state grants funds for landfills to be jointly used by applicants, it should insist that the applicants close their unsanitary dumps and avail themselves of the facility—and be willing to impose penalties if they don't.

(iii) *Integral Approach to Funding Complete MSWM Programs*

Going beyond the above suggestions to improve on the impact of the present grant programs, state support for MSWM should be considered in a broader context of offering an alternative for formulating investment strategy at the local and regional level. To be sure, the funding priority so far on landfills reflects the accession-driven nature of support programs; the European Union requires its standards to be observed with regard to landfills, but doesn't prescribe what kind of transport vehicles to use. But in normal commercial practice, the modernization of the vehicle fleet and its management precedes the modernization of disposal, and is indeed a precondition to regionalization as it makes the haulage of waste over longer distances affordable. In according future state aid to municipalities, there is little justification in the future to favor landfill investment over modernization of the vehicle fleet—and certainly not on the Alföld where, as this paper shows, the modernization of the collection and transport is badly lagging. And if state support is given for vehicles and containers, again it should be made on the basis of business plans that demonstrate not only the cost effective use of equipment but also the fiscal effort for cost recovery and the regionalization of transport and collection systems. These could be merged with smaller municipalities, or by contracting them out to a single operator. As long as even the smaller municipalities maintain their separate service organizations, the economies of scale in modern MSWM cannot be reaped.

In the same vein, the myopic emphasis on landfills has prevented any attention being given to transshipment yards. Transshipment yards are a regular feature of modern regional transport of waste, particularly for smaller settlements where waste can be gathered (in compactor containers) and hauled at rather long intervals—once or twice a month—to a central landfill.

Transshipment yards are a common feature of modern MSWM and have already made their appearance in the Dunántúl region, (i.e., in Rumpold's operations centered around their Esztergom and Bicske landfills). However, the absence of a regulatory policy on transshipment yards simply reflects a case of the law lagging behind economic and technical developments. This is an inhibiting factor for the integration of transshipment yards in the state aid programs. It can be argued that in a great number of cases where the state-provided grant funding for new landfills a transshipment yard for hauling waste to an already existing landfill would have been a far more cost effective investment. (Investments in transshipment yards, rather than landfills, presume contractual arrangements between municipalities and companies. This is a major stumbling point for autarkistic municipalities who want to continue to have their own municipal company and their own landfills. Such attitudes are aided and abetted by the State's *de facto* practice of subsidizing landfills in close vicinity to each other.)

4.3 *Conclusions*

It would be tempting to go further than the above piecemeal recommendations and suggest a more far-reaching policy reform. Transition economies have much to learn from each other's experience, and the Slovak economic incentives and disincentives outlined above appear worthy of emulation. But that would call into question the rationale for subsidized grants in aid programs for MSWM altogether; a main lesson from both Slovakia and the Czech Republic is that the development of MSWM can be financed under private auspices with proper incentives, disincentives and regulations.

To shift the financial burden of the cost of EU accession from the budget to private sources, (and if possible, to foreign investors, would appear to be a paramount objective of all transition economies. However, the evidence of the present study suggests that in Hungary—and certainly on the Alföld—budgetary funding has in many cases had a negative impact on the financial prospects of already existing private MSWM operators. As a result of the funding role assumed by the central government, investors faced more uncertain and a less promising market prospects in the second half of the nineties. This gives strong ground to the hypothesis that the government subsidies for landfills have reduced the incentives and increased the risk to potentially interested private investors in MSWM in Hungary, thus displacing potential private investment.

This is not to be considered as a completed or unalterable process. If indeed such displacement has taken place, which is highly probable, it is on account of the longstanding public policies that influence investment decisions. Alternative policies may be devised to encourage a higher level of private participation in the sector. Therefore, the most fundamental policy change suggested by this study is to correct investment and regulatory policies in such a way as to encourage private investment, or at least ensure an even playing field between public and private enterprise in MSWM. More specific recommendation on such a policy change are beyond the scope of this paper, which we feel will have served its purpose if it opens eyes to discern the shortcomings of past policies and paves the way for the consideration of alternate approaches.

ANNEX I

Table 1.1
Important Private Service Providers in MSWM in Hungary

Name of the Company	Centre of Region Serviced	Region Name	New Landfill Built	Investor Took Part in Landfill Construction
A.S.A.	Gyál	Central Hungary	+	+
	Debrecen	North-Alföld	+	+
	Hódmezővásárhely	South-Alföld	+	+
	Nádudvar	North-Alföld	+	–
Becker	Makó	South-Alföld	+	–
Doppstadt	Zsámbék	Central Hungary	n.a.*	n.a.
Compagnie Generale des Eaux	Pécs	South-Dunántúl	–	–
Mullnex	Körmend	West-Dunántúl	+	+
OTTO	Vác	Central Hungary	n.a.	n.a.
	Oroszlány	Central Dunántúl	+	n.a.
	Tapolca	Central Dunántúl	n.a.	n.a.
REM-RWE	Tatabánya	Central Dunántúl	+	n.a.
Entsorgung	Nyíregyháza	North-Alföld	n.a.	n.a.
Rumpold	Marcali	South Dunántúl	+	+
	Esztergom	Central Dunántúl	n.a.	n.a.
	Bicske	Central Dunántúl	+	n.a.
Rethmann	Szolnok	North Alföld	–	–**
	Kunszentmárton	North Alföld	+	+
Saubermacher-Ryno	Nagykanizsa	West Dunántúl	–	–
TAPPE	Békéscsaba	South Alföld	+	–

* n.a.: not available

** The landfill construction at Szolnok was postponed, and is likely to be funded mostly from an ISPA-grant. See Annex III.

SOURCE: Köztisztasági Fórum 1995, 1996, 1997, 1999.

Table 1.2
Beneficiaries of State Grants for Landfill Construction

Only CEPF Support			Only Targeted Support			Supported from Both Sources			
Settlement	Year	County	Settlement	Year	County	Settlement	Year	Year	County
Békéscsaba	1996	Békés	Izsák	1998	Bács-Kiskun	Orfű	1997	1996	Baranya
Dombegyház	1995	Békés	Sellye	1997	Baranya	Pécs	1999	1997	Baranya
Kunágota	1993	Békés	Szászvár	1996	Baranya	Krasznokvajda	1997	1997	Borsod-Abaúj-Zemplén
Újkígyós	1993	Békés	Szellő	1996	Baranya	Tiszaluc	1997	1996	Borsod-Abaúj-Zemplén
Füzér	1993	Borsod-Abaúj-Zemplén	Edelény	1998	Borsod-Abaúj-Zemplén	Makó ²	1998	1997	Csongrád
Hídasnémeti	1996	Borsod-Abaúj-Zemplén	Monok	1999	Borsod-Abaúj-Zemplén	Szentes	1998	1997	Csongrád
Hídvégárdó	1994	Borsod-Abaúj-Zemplén	Szendró	1998	Borsod-Abaúj-Zemplén	Adony	1997	1997	Fejér
Tómor	1995	Borsod-Abaúj-Zemplén	Szőgliget	1998	Borsod-Abaúj-Zemplén	Polgárdi	1996	1996	Fejér
Bicske	1997	Fejér	Tornaszentjakab	1997	Borsod-Abaúj-Zemplén	Karcag	1998	1996	Jász-Nagykun-Szolnok
Bátónyterenye	1994	Nógrád	Sárbogárd	1998	Fejér	Kunszentmárton	1997	1997	Jász-Nagykun-Szolnok
Nagyoroszi	1993	Nógrád	Székesfehérvár	1999	Fejér	Oroszlány	1999	1998	Komárom-Esztergom

Table 1.2 (continued)
Beneficiaries of State Grants for Landfill Construction

Only CEPF Support			Only Targeted Support			Supported from Both Sources			
Settlement	Year	County	Settlement	Year	County	Settlement	Year	Year	County
Dunakeszi	1996	Pest	Jánosomorja	1998	Győr-Moson-Sopron	Tatabánya	1997	1997	Komárom-Esztergom
Marcali	1994	Somogy	Nádudvar	1996	Hajdú-Bihar	Túra	1998	1997	Pest
Szenta	1993	Somogy	Jászapáti	1998	Jász-Nagykunszolnok	Kaposvár	1997	1996	Somogy
Vése ¹	1996	Somogy	Nagykőrű	1997	Jász-Nagykunszolnok	Demecser	1996	1996	Szabolcs-Szatmár-Bereg
Nagykálló	1992	Szabolcs-Szatmár-Bereg	Balassagyarmat	1998	Nógrád	Ibrány	1997	1996	Szabolcs-Szatmár-Bereg
Bakonynána	1993	Veszprém	Salgótarján	1998	Nógrád	Nyíregyháza	1997	1996	Szabolcs-Szatmár-Bereg
Sümege	1993	Veszprém	Dabas	1999	Pest	Szakoly	1997	1996	Szabolcs-Szatmár-Bereg
Bakonybél	1993	Veszprém	Dömsöd	1999	Pest	Záhony	1997	1996	Szabolcs-Szatmár-Bereg

Table 1.2 (continued)
Beneficiaries of State Grants for Landfill Construction

Only CEPF Support			Only Targeted Support			Supported from Both Sources			
Settlement	Year	County	Settlement	Year	County	Settlement	Year	Year	County
—	—	—	Barabás	1996	Szabolcs-Szatmár-Bereg	Ajka	1997	1996	Veszprém
—	—	—	Fábiánháza	1996	Szabolcs-Szatmár-Bereg	—	—	—	—
—	—	—	Nagyhalász	1996	Szabolcs-Szatmár-Bereg	—	—	—	—
—	—	—	Tamási	1996	Tolna	—	—	—	—
—	—	—	Csepreg	1997	Vás	—	—	—	—
—	—	—	Répcelak	1996	Vás	—	—	—	—

1 The support was granted for building a transshipment yard, not a landfill.

2 Received Phare support as well, through the Environmental Fund.

The landfills of the Study Area are shaded.

Table 1.3

Classification of Landfills in the Study Area

This table shows a classification of landfills according to KGI (1999). This classification is based on the provisions made on the characteristics of landfills in the applications for CEPF grants. The sites marked ‘Appropriate’ meet—theoretically—the requirements of the Ministry for the Environment, and more or less those of the EU.

Settlement	County	Classification of Landfill	Capacity of Landfill [m ³]
I. Publicly-operated landfills which have not received state support			
Gyula	Békés	Inappropriate	1,200,000
Szeged	Csongrád	Inappropriate	2,500,000
II. Publicly-operated landfills which have received state support			
Békéscsaba	Békés	Appropriate	3,000,000
Dombegyház	Békés	Partially appropriate	14,000
Jászapáti ¹	Jász-Nagykun-Szolnok	Appropriate	1,500,000
Karcag	Jász-Nagykun-Szolnok	Appropriate	320,000
Kevermes	Békés	Inappropriate ²	40,000
Kunágota	Békés	Inappropriate	16,600
Nagykörű	Jász-Nagykun-Szolnok	Appropriate	94,500
Szentes	Csongrád	Appropriate	242,000
Újkígyós	Békés	Partially appropriate	30,000
III. Privately-operated landfills which have not received state support			
Hódmezővásárhely	Csongrád	Appropriate	4,209,000
Debrecen	Hajdú-Bihar	Appropriate	3,827,500
IV. Privately-operated landfills which have received (or will receive) state (or other) support			
Makó	Csongrád	Appropriate	250,000
Kunszentmárton	Jász-Nagykun-Szolnok	Appropriate	259,000
Nádudvar	Hajdú-Bihar	Appropriate	150,000
Szolnok	Jász-Nagykun-Szolnok	Inappropriates	10,000,000

¹ Built before the legislation took effect.

² The landfill has not yet been completed.

Table 1.4

Investment and Financing of the Main Landfills in the Study Area

Settlements Where the Landfills Locate	Total Investment Cost of Landfill Construction in USD thousands	Total Subsidies for Landfill Construction in USD thousands	Population of Applicants in Case of State Support, or of the District Served	Total Subsidies/ Total Investment Cost [%]
I. Publicly-operated landfills which have not received state support				
Gyula ¹	54	0	34,331	0
Szeged	n.a.	n.a.	189,528	n.a.
II. Publicly-operated landfills which have received state support				
Békéscsaba	2,570	453	67,609	18
Dombegyház	205	37	3,459	18
Jászapati ²	3,902	2,198	114,800	56
Karcag	1,305	549	24,828	42
Kevermes	66	26	2,708	40
Kunágota	152	56	3,000	37
Nagykörű	1,028	389	18,964	38
Szentes	979	684	43,084	70
Újkígyós	82	24	5,716	29
III. Privately-operated landfills which have not received state support				
Hódmezővásárhely	2,291	0	107,925	0
Debrecen	4,799	0	265,432	0
IV. Privately-operated landfills which have received (or will receive) state (or other) support				
Makó ³	1,137	1,069	71,517	94
Kunszentmárton ²	1,580	1,082	41,564	68
Nádudvar	676	452	8,715	67
Szolnok	n.a.	n.a.	101,402	n.a.
Total	20,826	7,019	1,104,582	

SOURCES: Adatok beszerzése Magyarország hulladéklerakóiról. Környezetgazdálkodási Intézet Környezetvédelmi Intézete (KGI), Budapest, 1999.; Governmental Announcements: Kormány közlemény a helyi önkormányzatok 1995. évi új induló

céltámogatásáról; Kormány közlemény a helyi önkormányzatok 1996. évi új induló céltámogatásáról; Kormány közlemény a helyi önkormányzatok 1997. évi új induló céltámogatásáról; Kormány közlemény a helyi önkormányzatok 1998. évi új céltámogatásáról; MAKK-questionnaire, January 2000.

All prices are expressed in constant 1998 USD prices. (The average rate for 1998 was 1 USD = 214 HUF)

Note: The data sources mentioned above sometimes contain contradictory, scanty or unreliable data. During the data collection it was attempted, to select always the most reliable data source. The reliability preference-list in an ascending row is as follows: Governmental announcement (Kormány közlemény); KGI (1999); MAKK-questionnaire.

- ¹ These uninsulated landfills were built during the 80s out of the local council's (the predecessor of the local government) budget. The investment costs of Gyula refer to development costs such as purchasing a compactor and providing the landfill site with drinking water etc.
- ² Construction of landfill incomplete.
- ³ Recently commissioned.

Table 1.5
Capacities and Utilization of Landfills in the Study Area

Settlement	Total Capacity of Landfill [m ³]	Planned Lifetime of Landfill [years]	Amount of Waste Placed at the Landfill Annually [m ³]	Amount of Household Waste Disposal at the Landfill Annually [m ³ p.a.]	Amount of Industrial Waste Disposal at the Landfill [m ³ p.a.]
I. Publicly-operated landfills which have not received State support					
Gyula	1,200,000	20	60,000 ¹	50,000 ¹	10,000 ¹
Szeged	2,500,000	40	300,000 ^{2,3}	27,000 ⁴	37,610 ⁴
II. Publicly-operated landfills which have received State support					
Békéscsaba	3,000,000	40	95,000	67,000	28,000
Kevermes	17,000	34	400–500 ²	450 ²	50 ²
Nagykőrű	n.a.	n.a.	n.a.	n.a.	n.a.

Table 1.5 (continued)
Capacities and Utilization of Landfills in the Study Area

Settlement	Total Capacity of Landfill [m ³]	Planned Lifetime of Landfill [years]	Amount of Waste Placed at the Landfill Annually [m ³]	Amount of Household Waste Disposal at the Landfill Annually [m ³ p.a.]	Amount of Industrial Waste Disposal at the Landfill [m ³ p.a.]
II. Publicly-operated landfills which have received State support <i>continued</i>					
Szentes	245,000	10	27,000 ²	13,000 ²	14,000 ²
Újkígyós	68,000	20	3,000 ²	2,500 ²	500 ²
III. Privately-operated landfills which have not received Statesupport					
Debrecen	4,209,000	50	462,060	314,340	147,720
Hódmező-vásárhely	3,827,500	60	400,002	220,002	180,002
IV. Privately-operated landfills which have received (or will receive) State (or other) support					
Makó	250,000	15	33,000–48,000 ¹	22,000 ¹	11,000 ¹
Kunszentmárton	280,000	32	50,000 ¹	35,000 ¹	15,000 ¹
Nádudvar	150,000	43–44	5,505 ²	1,700 ²	600 ²
Szolnok	10,000,000	30	319,000 ¹	204,000 ¹	115,000 ¹

SOURCES: MAKK-questionnaire, interviews

¹ Uncompacted waste.

² Compacted waste.

³ The respondent gave “60,000 tonnes” as an answer in our questionnaire. For the sake of comparison we gave an estimate transformed into m³ here. In the course of this transformation we used 200 kg/m³ (the value is widely accepted as the average density of the municipal solid waste in Hungary)—in the case of industrial waste it is likely to be overestimated.

⁴ The daily amounts of uncompacted waste placed at the landfill are: population: 460 m³; industry: 400 m³

Table I.6

Investment Costs and Population Serviced of the Main Landfills in the Study Area

Disrict Centre Settlements with Landfills	Total Capacity of Landfill [m ³]	Population in the Serviced District	Total Investment Cost of Landfill Construction [in USD thousands]	Investment Cost [USD/m ³]	Investment Cost/ Population [USD/capita]
I. Publicly-operated landfills which have not received state support					
Gyula ¹	1,200,000	34,000	54	0.05	2
Szeged	2,500,000	190,000	n.a.	n.a.	—
II. Publicly-operated landfills which have received state support					
Békéscsaba	3,000,000	68,000	2,500	0.83	37
Kevermes	17,000	3,000	65	3.85	24
Nagykőrű	n.a.	19,000	1,028	n.a.	54
Szentes	245,000	43,000	978	4.00	23
Újkígyós	68,000	6,000	82	1.21	14
III. Privately-operated landfills which have not received state support					
Debrecen	4,209,000	265,000	4,799	1.14	18
Hódmező- vásárhely	3,827,500	108,000	2,291	0.60	21
IV. Privately-operated landfills which have received (or will receive) state (or other) support					
Makó ²	250,000	72,000	1,137	4.55	16
Kunszentmárton	280,000	42,000	1,580	5.64	38
Nádudvar	150,000	9,000	676	4.51	78
Szolnok	10,000,000	101,000	n.a.	n.a.	—
Total	25,746,500	958,000	15,190		

Table 1.7
Waste Disposed in the Main Landfills in the Study Area

Settlement	Waste Collection Company	Amount of Waste Collected in 1999			
		Industrial		Population	
		[m ³]	[t]	[m ³]	[t]
I. Publicly-operated landfills which have not received state support					
Gyula	Municipal Town Management Co.	10,000	2,000	50,000	10,000
Szeged	Szeged Environm. Management Public Utility Co.	135,000 ²	27,000	188,050 ²	37,610
II. Publicly-operated landfills which have received state support					
Békéscsaba	Municipal Town Management Co.	28,000	5,600 ²	67,000	13,400 ²
Kévermes	The local government of Kévermes	50 ¹	10 ²	450 ¹	90 ²
Nagykőrű		n.a.	n.a.	n.a.	n.a.
Szentos	Municipal Town Management Co.	14,000	2,800 ²	12,000	2,400 ²
Nagytóke	Municipal Town Management Co.			200	40 ²
Eperjes	Municipal Town Management Co.			800	160 ²
Total		14,000	2,800 ²	13,000	2,600 ²
Újkigyós	Local government, Waterworks Ltd.	500	100 ²	2,500	500 ²
III. Privately-operated landfills which have not received state support					
Debrecen		147,000	29,400 ²	283,000	56,600 ²
Hajdúménasz	A.K.S.D. Ltd.			12,420	2,484 ²
Hajdúszovát	A.K.S.D. Ltd.			2,280	456 ²
Ebes	A.K.S.D. Ltd.	720	144 ²	2,940	588 ²

Table 1.7 (continued)
Waste Disposed in the Main Landfills in the Study Area

Settlement	Waste Collection Company	Amount of Waste Collected in 1999			
		Industrial		Population	
		[m ³]	[t]	[m ³]	[t]
III. Privately-operated landfills which have not received state support					
Derecske	A.K.S.D. Ltd.			9,480	1,896 ²
Hosszúpályi	A.K.S.D. Ltd.			4,220	844 ²
Hódmezővásárhely	A.S.A. Hódmezővásárhely Sanitary Ltd.	55,820 ²	11,164	55,210 ²	11,042
All other 21 settlement.	A.S.A. Hódmezővásárhely Sanitary Ltd., Csongrád County Sanitary Ltd.	46,735 ²	9 347	50,345 ²	10,069
IV. Privately-operated landfills which have received (or will receive) state or other support					
Makó	Becker Pannonia Kft	11,000	1,333 ¹	22,000	2,667 ¹
Kunszentmárton	Csongrád County Sanitary Ltd.	15,000	3,000 ²	35,000	7,000 ²
Nádudvar	AKSD Ltd.	600	120 ²	1700	340 ²
Szolnok	Rethmann	115,000 ¹	23,000 ²	204,000 ¹	40,800 ²

1 Estimation of the respondent.

2 For the sake of comparison we gave an estimate transformed from tonnes into m³, and vice versa. In the course of this transformation, we used 200 kg/m³ (widely accepted as the average density of the municipal solid waste in Hungary)—in the case of industrial waste it is likely to result in an overestimate.

Table 1.8
Vehicles and Equipment in MSWM in the Study Area

Settlement	Characteristics of Collecting Trucks				Capacity of Waste Containers			
	No.	Age ¹	Capacity m ³	Compa- tor on Trucks	4 m ³	1.1 m ³	110l	Other
I. Publicly-operated landfills which have not received State support								
Gyula Waste-collecting trucks container hauler	6	12	16	n.a.	Yes	Yes, 140 pcs	Yes, 6,000 pcs	
	4		4-5					
Szeged Waste-collecting trucks container haulers	10	6	16	10	Yes	Yes	Yes	240 liter & 2.4 & 5.7 m ³ containers
	11	12	4					
II. Publicly-operated landfills which have received State support								
Békéscsaba	5	10.8	14	Yes				
Dombegyház	No regular waste collection							
Kévermes	1	7 ³		No				Waste bags collecting
Szentes	5	10	5-18	Some	Yes	Yes	Yes	50l cont.
Újvágyós	No regular waste collection							

Table 1.8 (continued)
Vehicles and Equipment in MSWM in the Study Area

Settlement	Characteristics of Collecting Trucks				Capacity of Waste Containers			
	No.	Age ¹	Capacity m ³	Compac- tor on Trucks	4 m ³	1.1 m ³	1101	Other
III. Privately-operated landfills which have not received State support								
Debrecen waste collection truck container hauler	10	7	20	Yes		Yes		770, 240, liter cont.
	11	6	3.5; 4.3; 7.5; 30					
Hódmezővásárhely waste collection truck container hauler	6	5	14	Yes	Yes, 150 pcs	Yes, 250 pcs	Yes, 17,000 pcs	
	3	4	7					
IV. Privately-operated landfills which have received (or will receive) state or other public support								
Makó	3	0 ⁴	9; 18	Yes			Yes	
Kunszentmárton	2	1	8	Yes		Yes	Yes	
Nádudvar	1	10	10	No			Yes	
Szolnok waste collection truck container hauler	12 ⁵	1-3		Some	Yes, 100 pcs	Yes, 1000 pcs		240 liter: 12,500 pcs
	9 ⁶	see ⁷						

- ¹ Average age of trucks.
- ² Average capacity of trucks.
- ³ MTZ-80 tractor.
- ⁴ New ones.
- ⁵ Waste collection trucks.
- ⁶ Container haulage trucks.
- ⁷ Trucks are permanently replaced by Rethmann's used, but newer engines.

Table 1.9
The Size of Districts

Core Settlement of the Served District with the Landfill	Population of the Core Settlement	Population Based on the Application for State Support „Theoretical” Value	Population of Served District¹
I. Publicly-operated landfills which have not received State support			
Gyula	34,331	—	34,331
Szeged	175,301	—	189,528
II. Publicly-operated landfills which have received State support			
Békéscsaba	67,609	67,609	67,609
Karcag ²	23,828	24,828	23,828
Keveermes	2,708	2,708	2,708
Nagykörtű ³	2,168	18,964	n.a.
Szentes	32,891	43,084	34,318
Újkígyós	5,716	5,716	5,716
III. Privately-operated landfills which have not received State support			
Debrecen	212,235	—	265,432
Hódmezővásárhely	51,180	—	107,925

Table 1.9 (continued)
The Size of Districts

Core Settlement of the Served District with the Landfill	Population of the Core Settlement	Population Based on the Application for State Support „Theoretical” Value	Population of Served District¹
IV. Privately-operated landfills which have received (or will receive) State (or other) support			
Makó	27,529	75,501	27,529
Kunszentmárton ⁴	11,798	44,243	41,564
Nádudvar	8,715	32,606	8,715
Szolnok	78,328	101,402	101,402

- ¹ In some of the cases, the district actually served by the landfill is not identical with the district that applied for state support. The last two columns show the differences, where data was available. The information on the „population served by the landfill” comes from the responses for our questionnaire and from the interviews.
- ² There is no detailed information on the district served by the Karcag landfill. Only these two settlements had applied for and won grants from CEPF and targeted support.
- ³ There is no detailed information on the district served by the Nagykörű landfill. These settlements have applied for and won targeted support.
- ⁴ The numbers were stated as the real service district in the response for the questionnaire. However, in January 2000 the landfill was not in operation yet, so this information is not reliable.

ANNEX II

The Evolution of the Legal Framework for MSWM in Hungary after the Transition

Introduction

In a research paper such as this, the matter of the legal environment would be expected to be taken up before the description of the development process, as the legal framework is supposed to set the conditions for the process, including for the functioning of so-called “private-public partnerships” (PPPs). However, in the case of Hungary it may be argued that MSWM legislation was on the whole neutral to the development of PPPs. Foreign investors appeared on the Hungarian scene before a new legislative framework in MSWM began to unfold. Hungary adopted a framework law for waste management only in 2000, and some of the reasons for the protracted delays in introducing such a law are discussed in this annex. In the meanwhile, most of the strategic investors that are now present in Hungary established their bases in the first half of the 90s, coping with the national and local gaps in legislation as they did. As detailed below, the subsidized funding of landfills in the latter half of the 90s probably did more to hold back private investment than any legal factors.

A comparison of the evolution of legal frameworks on MSWM in the region suggests that the sector-specific legislative framework is not an absolute prerequisite to foreign investment, although specific incentives and disincentives, such as those introduced in Slovakia, can be very effective in stimulating private investment. Factors such as a promising market, trust between partners, and a general faith in the country’s prospects, (subsumed under the catchword “country risk”), appear to be more important determinants of investor behavior than a “European Union-conforming” legal framework in MSWM.

Bulgaria prided itself in being the first transition economy to adopt a framework environmental law on waste. (A framework law, prepared with the assistance of European Union consultants, was adopted in 1997.) Yet Bulgaria has been far less successful overall in attracting private strategic investors than the Czech Republic, Hungary, or Slovakia, and has failed to attract any private investment for landfill construction at all.¹

¹ See Paul Dax, “Summary Inception Report”, see Bibliography of the Discussion Paper

Two approaches to new legislation are observed side by side in the region. One is the “patchwork” approach of building on existing laws, filling in gaps and amending the rules in response to needs as they arise. The other is a “clean slate” approach, starting with a brand-new “framework law”. In the aftermath of 1990, there was a strong temptation by the incoming “new brooms” to discard as much as possible the “communist” laws of the past. This tendency is especially pronounced in the environmental field, because environmental legislation is relatively new and hasn’t been handled systematically before. However, Hungary’s legislative progress in MSWM between 1990 and 2000 can be characterized as more of a patching up approach, with laws and local regulations being enacted to fill specific gaps or to respond to urgent needs. As an example, Budapest’s interim regulations on MSWM are discussed below as an example of adequate local regulation.

Hungary: Laws and Issues in MSWM in the Early Years of the Transition

In Hungary, the Law of the Environment was adopted in 1995 (Specifically, Law LIII on the General Rules of Environmental Protection). A few specific laws and regulations followed, including the Law on the Mandatory Utilization of Municipal Services (Law XLII of 1995, see below), a governmental decree on hazardous waste management (Government Decree No. 102/1996 (VII.12.) on Hazardous Wastes), and the law on product charges (Act LVI of 1995 on Environmental Protection Product Charges and the Environmental Protection Product Charges of Certain Products).

In Hungary, there existed a body of law, (albeit thin), on residential solid waste management before the transition. Governmental Decree 1/1986 (II.1) is a concise, but fairly comprehensive statement on allocation responsibilities and service standards. In the section on the “Performance of the Public Sanitation Service”, the decree authorizes three kinds of entities to perform the service:

- (1) specialized public sector enterprises established for the purpose;
 - (2) other public enterprises which include public sanitation in their domain, and
 - (3) small entrepreneurs and private individuals who have received requisite permits.
- Thus, a 1986 decree already made allowances for private participation in the sector.

The decree provided essential guidelines on permitting, on the standards of landfills, and on the collection of residential waste in standardized containers. On the whole, this decree might have been an adequate basis on which further laws and decrees could have been drafted in the absence of a framework law.

After the transition, local governments gained virtual autonomy in many areas of public service, including waste management. However, the question of their mandate to perform the service, and consequently the question of their authority *vis a vis* the citizenry to make use of the service and to collect a fee—became contentious legal issues.

Neither the Local Governmental Law nor the 1999 Law on Waste Management have created a clear-cut situation of financing the MSWM service. The reason why this issue continued unresolved for so long is rooted in a broader conflict. The central budget didn't intend to finance the whole of the local technical services but a complete withdrawal was politically unfeasible either, as became apparent. Due to financial shortages both on capital sources and operation expenses, *using only the existing methods of central redistribution, municipalities could not overcome to reorganize MSWM service.* Related to the unresolved issue of the sharing of financial liability between the central and local government were the ambiguous rights of the local government *vis a vis* the citizenry. As long as waste collection was not mandatory, citizens had a case to argue that they should be allowed to dispose of their waste as they chose, instead of being forced to pay for the municipal service. This became a real problem for PPPs where municipalities faced the need to raise fees so as to cover their contractual payments to the investors. Political opponents of private investment in public services, (and there are many still left), seized on the opportunity provided by this gap in the law and tried to sabotage the new joint ventures by encouraging citizens to “manage” their own garbage—which in most instances meant illegal dumping.

Law XLII, passed in 1995, was an attempt to resolve the issues—or rather, one half of the issue. Law XLII is only one page long. It obliges the citizenry to use waste disposal services as regulated by the local government, and subject to the fees determined by the local government. However, Law XLII stopped short of declaring solid waste management a “mandatory” local task.

But Law XLII also created a new problem. In Article I, paragraph 3, it obliged local governments to award the service under a competitive tender. This came as a shock to the majority of local governments (including Budapest), which had always managed the service on their own. Municipalities have either established their own companies for the purpose, or simply have not thought about changing the status quo.

Whilst the principle of awarding contracts by competitive bidding may be regarded as a positive step per se, it hit most municipalities unprepared in the absence of generally accepted standards of service and conditions of contracts to be incorporated in tenders. The local governments can make their own regulations and standards, and may in principle incorporate them in tender documents calling for competitive bids. However, most still lack the experience and sophistication to do so, or are simply satisfied with the status quo and have

more urgent problems than to undergo competitive bidding procedures which their own company would win, anyway.

This provision of Law XLII also presented a problem to municipalities that had awarded contracts by direct negotiations, rather than by competitive tender—and this includes most of the early cases where joint ventures with foreign partners have been formed. There are cases where political opponents of a joint venture are threatening to cancel contracts on the grounds that they were not awarded by competitive bidding—or alternately demand new tenders in compliance with Law XLII.

Law XLII is an example of partially successful lawmaking by means of patching up the existing legal framework, modifying or canceling provisions that need change (and creating new problems, as in the case of the stipulation for competitive bidding).

In the meanwhile, the competing tendency to start from a clean slate, drawing on the perceived need to “harmonize” with European Union legislation was pursued through a Phare-funded consultancy, which resulted in a comprehensive draft for a waste law during 1995-1996. Though this was by and large a satisfactory law, it was discarded in favor of a competing and much shorter draft “Law Concerning Waste Management” which was prepared in-house in the Ministry, and which was anything but satisfactory. These two drafts are no longer relevant, as the Law on Waste Management—which took effect in January 2001—was changed many times until being adopted by parliament in June 2000.²

Following the passage of Law XLII, a whole new body of law came into being as local governments issued their own regulations. For example, Budapest issued Regulation 67/95 concerning the “Mandatory Use of the Public Service Regarding Household Waste as a Constituent of Solid Waste” (see below). This law is ostensibly “based on the authorization

² The parallel emergence of two competing drafts is itself symptomatic of legislative processes in economies of transition. It is strange that the authors of the two versions do not seem to have consulted each other, and that a ministry should, after working along for more than a year with PHARE assistance, discard the product and produce a completely different version for submission to parliament. Perhaps this is not surprising in so much as it reflects the emergence of a true market economy where interest groups are competing to imprint their conflicting views on legislation. As in Western democracies, interest groups bring their own proposals to pending the passage of a new the table and lobby to steer things their way. The difference, however, is that in the West these conflicts have to do with marginal modifications of an established legal framework which already provides functioning rules of the game. In Hungary the whole framework is in the arena of conflict. In Hungary, fortunately, business developed before a new legal framework was “carved into stone”. Legislation itself did not stand still, as for example in the case of the (imperfect) Law 42, which at least authorized municipalities to make garbage collection a mandatory, or the Budapest law issued by the capital city, which satisfactorily regulates the contractual relationship with the citizens.

of the (aforementioned) Law XLII, 1995” to make waste collection an obligatory service. In the preamble, the regulation is explicitly made an *interim* measure pending the “creation of the comprehensive and unified regulation concerning obligatory (*nota bene*) public services”. Whilst the law was supposed to be transitory, it contained a number of important elements of a sound framework law, as described below.

The Case of a Useful Law in Budapest

Budapest’s decree 1995/67, which deals with the mandatory use of city services, is well crafted and concise (13 articles over 6 pages, accompanied by a four-page “Justification” section explaining the rationale of the law article by article). The Justification starts with the statement that Law 42/1995 authorizes local governments to issue decrees concerning the mandatory use by citizens of municipalities’ waste disposal services. (Without this empowerment, there would have been no point in issuing a new decree, since the city would not have been able to enforce it.) The Justification goes on to explain that the innovative feature of the decree is that the city will in future charge a fee for a service which should cover related expenses. A simple schedule of volumetric fees, stating the fee for a single servicing of four different types of containers (from 110 liters to 1,000 liters) is appended to the decree.

Article 1 specifies that “whenever there is a community of owners, as in the case of codominia and cooperative housing units, the duty to use the service refers not to the individual owners, but to their community”. This is an important provision, and the kind of provision that appears to be either absent or unenforceable in some other countries’ current legislation, including Bulgaria and Romania.

Article 3 stipulates that since the service is mandatory, it is unnecessary to make individual contracts with the users. This resolved the ambiguity of the extant legislation on the contractual relationship between the citizenry and the provider of the service.

Article 4 says that the “fee is to be set so as to meet the cost of the appropriate level of the service by the provider, and the development of the related activities”. This is important, because it countervenes the habit of budgeting only for current expenditures but not for amortization—a public accounting practice that indirectly fosters subsidization and leads to inadequate funding, as well as to unfair competition *vis-a-vis* private enterprise.

Articles 7 to 10 are interesting, in that they deal with the rights of the individuals to refuse the service or to obtain concessions, and the conditions under which the provider can refuse the service. Articles 11 and 12 deal with enforcement and fines.

Budapest's decree does not deal with the whole subject of solid waste management, but focuses instead on the relationship between provider and consumer. Yet, as far as it goes, the regulation came to grips with real problems in a way that could be adopted by other municipalities. (Precedents of good legislation at the local level could render a framework law largely redundant; what is needed is codification, together with rules and legal precedents that would provide a guide to good practices and also stand up in court. However, such an Anglo-Saxon common law approach is anathema to those working on "systematic" EU harmonization—not to mention the Phare-funded consultant community that now profits greatly from it.)

Law XLIII on Waste Management

At long last, the Hungarian parliament passed a framework law on waste management in early 2000. As a framework law, its application will become concrete only after a host of regulations are adopted. As it stands by itself, it leaves some of the most burning issues in waste management open. This is often the case with framework laws, yet a framework law should be expected to at least indicate policy and strategy on the issues of the day, of which this law falls short.³ The Law is in general conformity with European Union principles, but is woefully short on substance and creates new ambiguities, as will be seen below.

Law XLIII declares MSWM as an obligatory task of local government (Article 12). The corollary—that therefore MSWM is to receive "normative" budgetary support from the budget like other obligatory services—is also pronounced in the Law. However, a lot of ambiguities remain. According to Article 39, the primary source of state support for the MSWM will be the normative support, the total sum of which will be determined year by year in the central budget⁴.

Furthermore, there is an article on fee setting—Article 25—which says that in setting the fees, local governments must determine the fees "to the measure of" "*arányosan*", which may be translated as "proportionally", or "to the just measure of"—a patent ambiguity):

- The nature of the public service ("*jelleg*", roughly meaning "nature" or "characteristic", though characteristically this word seems carefully calculated to avoid a concrete meaning);

³ According to critics, the lack of concrete policies and measures in the law reflects the adverse effects of strong industrial lobbies, including the packaging industry. At this point in time (January 2001) it would appear best to reserve judgment until the regulations under the new Law are formulated.

⁴ This provision is for operational expenditures. For investments, the present system of targeted support will continue to exist. It appears unclear if municipalities will have a right to claim budgetary resources for requisite capital expenditures now that MSWM has become a mandatory task.

- The quantity and quality of the waste handled⁵;
- and, to paraphrase of an even longer passage, “...taking into account the necessary expenditures for the effective operation of the service, separately for collection and transport and for disposal, and including the costs of closing and reclamation of landfills and its monitoring” (Note: This is not a verbatim translation, but tries to express the thought more clearly than the Law).

All this seems to come close to the incorporation of the principle of cost recovery from user charges, it falls short of that. Much will turn on the interpretation of the word “*arányosan*” in the application of the law.

No doubt municipalities who do not wish to raise charges will introduce some low charges “in proportion” to the three criteria above. They might then argue that they need budgetary support for this now obligatory service in view of the population’s limited ability to pay, and due to the high cost of the “effective” service. The “financial lobby” in the central government might well then argue that Article 25 establishes the principle of full cost recovery, therefore the MSWM does not require budgetary support. Thus, the Law does not adequately address the most vital fiscal issue, and leaves the thorniest problem to subsequent regulations and the budgetary process. (It is not unlikely that a sort of typical Hungarian compromise will result, where “rich” municipalities will pay for the service from user fees as they already do in many towns. Meanwhile, poor or otherwise politically favored communities will be awarded subsidies, with the consequent “moral hazard” that he who makes the least fiscal effort gets the most money).⁶

⁵ Under Hungarian law, charges for public services need to reflect the quantity of service. It is interesting that in accordance with this principle the Constitutional Court has struck down MSWM fees that are based on such things as the number of rooms in a household. It is probably a good thing that utility charges thus cannot become a tool of progressive taxation under Hungarian law.

⁶ Again, the remaining system of the targeted state support for project financing complicates the picture. It is not clear yet, whether the lawmakers have identified the shortcomings of the system (such as the counter-incentives to PPPs described in the Discussion Paper), so it is not known if the system will be changed or not. Anyway, the indefinite obligation for setting the fees for the MSWM service on the basis of cost recovery, the annually changing sum of normative and targeted state support (and the undefined allocation system), and other sources of state subsidization (firstly the new Environmental Fund Budgetary Appropriation (EPEA, which has replaced the CEPPF) present a puzzling prospect for financing MSWM in Hungary. Therefore, it is hard to predict who will ultimately bear the burden of the service, and whether the basis of a self-financing MSWM-sector will emerge. It is likely, that the municipalities and waste management companies want to get as much state “soft money” as they can, and the Law seems to countenance this. However, the “financial lobby” of the central government will presumably wish to curtail such ambitions).

Having critiqued the obfuscation of this key issue in the Law, it is perhaps fair to say that this may have been necessary to have the principle of obligatory service accepted by the financial lobby, tempered by the principle of cost recovery. The Law, no matter how fuzzily stated, also helps to meet the guidelines of the European Union (as, for example, incorporated in the EU's landfill directive). What is of concern to the topic of this paper is how the law is likely to impact private sector investment in MSWM. The Law for the first time obliges local government to operate an organized service, and to charge for it accordingly. By itself, this could turn cash-strapped municipalities into private investors. Furthermore, the law makes some specific provisions for the collection of overdue payments, and for nonpayment of fees. This should offer comfort to private investors.⁷

Thus *prima facie*, these provisions of the law would appear to favor private investment. The big question, however, is how the regulations and the budgetary process will work out. If the government decides to subsidize the service, and also give grants for needed investments in vehicles, local governments' tendencies to turn to private investors will abate, as has happened in the case of landfill construction as described earlier in this paper.

The other important but unresolved issue concerns the impact of the Law on the closure of unsatisfactory landfills. The continuing use of such landfills and unregulated dumps has steadily constituted an obstacle to the regionalization of the service as pursued by strategic investors. On this matter, the Law falls short of expectations. Article 55 merely obliged local governments to submit an environmental impact assessment of their existing landfills within two years of the passage of the Law to the Environmental Inspectorate, and subsequent to the findings of the Inspectorate, prepare a plan to meet the conditions determined by the authorities. If strongly regulated and enforced, this provision could result in the closure of unsatisfactory landfills by the middle of this decade. However, in the short run, the Law is unlikely to change much in local disposal practices.

Closure of the old landfills would hasten the development of demand for the services of regional operators equipped with modern landfills. The joint ventures from the very start had planned on regional operations, anticipating that the enforcement of environmental

⁷ According to Article 26, the overdues are collectible as taxes, which eases the task of the municipality. However, the municipality is obliged to transmit the sum of the overdue for the service provider within 8 days, if the latter had not been able to collect for 90 days. From then on, the municipality has the right to collect the overdue (given the right to apply such enforcement mechanisms as if it were collecting a tax) from the obligor. This provision in effect transfers the risk of fee collection from the provider of the service to the municipality, practically eliminating the service provider's risk for nonpayment. This article of the Law seems to reflect the efforts of the MSWM service provider lobby.

standards will in time result in the closure of old landfills. The prospects of these regional operators greatly depend on government policy regarding the phase-out, which is far from clearly stated at present.

In summary, the “proof of the pudding” will be in the regulations to come.

ANNEX III

Case Studies of the Two Major Strategic Investors in MSWM on the Alföld: A.S.A. and Rethmann

Case Study 1. A.S.A. in Hungary

Austria-based A.S.A. is an international company specializing in waste management. In addition to Hungary, it also has operations in Slovakia and the Czech Republic. The company has been operating in Hungary since 1991. Its two most important operations are its joint venture partnerships with Debrecen and Hódmezővásárhely. The company also operates on contract the publicly financed municipal landfill in Nádudvar, about 43 kilometers from Debrecen on the Alföld. A.S.A. also built a landfill in Gyál in the vicinity of Budapest with a view of penetrating the MSWM market of the capital city.

A.S.A. has invested about USD 11.7 million in Hungary to date. The Hungarian companies belonging to the A.S.A. Group currently employ nearly 400 people. Its revenue in Hungary amounted to about USD 8.9 million in 1998.

The Joint Venture: AKSD Debrecen

Debrecen is Hungary's second largest city with a population of about 250,000, including the surrounding settlements.

AKSD was funded as a joint venture between a consortium of three foreign strategic investors and the city of Debrecen; with the consortium having a 51% share and the city 49%. The joint venture was founded in 1991 with an initial capital of USD 3.9 million. The foreign partners' share was contributed in cash, Debrecen's was in kind, mainly in real estate, and an obsolete fleet of some 30 garbage collection trucks. (Most of this fleet was later sold to a Romanian town near the border.)

This was the first such joint venture in Hungary. Both partners appointed a director into the leadership of the firm. *Under its contract with the city of Debrecen*, the company agreed to assume responsibility for some of the unrelated activities of its predecessor organization, (e.g. for park maintenance and, in a different contract, the operation of the cemetery).

AKSD first replaced the equipment for transport and collection with:

- a fleet of nine modern garbage collection trucks (at a cost of about USD 100,000/unit)
- standardized containers handled by trucks of 120–240–770 liter capacity, as well as 1,100-liter-capacity minicontainers
- two compactors capable of compressing household waste to an average weight of about 0.8–1.0 tonnes/m³, from 2000 kg/m³.

The joint venture acquired a 25-hectare site for landfill development. The technical specifications for the landfill followed Austrian standards. A 60-centimeter clay base is covered by ribbed polyethylene cover. Piping for gas extraction and internal drainage are installed. This is the only landfill in Hungary which exploits landfill gas commercially. The permit is to raise the landfill to a height of 25 meters. With this volume, capacity is expected to be sufficient for about half a century. (It will also become the tallest mountain in the Hungarian plains.) The landfill was then commissioned, and started operations in early 1994.

The total amount of deposited waste was about 200,000 tonnes in 1999, of which only one third was household waste, and the rest industrial waste. *The old landfill, whose capacity was near its end, was abandoned. So far, it has not been recultivated.*

The Contract for Household Waste

The contract between the joint venture and Debrecen may be described as a package to reduce the risk of the venture to the investors. The main features of the contract were to guarantee the return of the investment during a five year period (1991–1996) in a way that the yearly annual revenues, fixed in advance between the city and the joint venture, would cover investments and return on capital. The contract gives the joint venture a monopoly in the residential solid waste collection for 15 years. It authorizes the company to enter into separate contracts with localities outside of Debrecen. The company may also enter into contracts with companies for non-hazardous waste management.

Under its contract, the company was to receive escalating lump sum fees for the core service of collection, transport, and disposal. The schedule of yearly fees was calculated so as to start from a low level but to escalate rapidly in later years. The formula used to calculate the fee included indexing for inflation so as to secure return on investment in terms of constant prices. The notion behind this structure was the limited capacity to pay at the time the agreement was framed, coupled with sanguine expectations of a rapid increase in capacity to pay (both in the municipality's revenues and the population's ability to pay a fee). In the first year (1992), the city only paid USD 400,000 for the service, but the fee was to be more than fivefold five years later.

The Municipal Council and the company started to discuss the terms of the contract again in 1997 when the formula laid down in the original contract would have called for a payment of about USD 2.8 million. The company offered to reduce it to about USD 2.5 million, but the Council insisted on a further reduction to USD 2.3 million. The mother company protested that they had not made a profit in the previous five years after having invested more than USD 4.9 million.

Eventually, a compromise was struck. The company continues to receive a fixed fee for the basic service, and implicitly the fee is acceptable to the AKSD. In 1997, the parties agreed to adjust the lump sum fee annually, for inflation and other factors, according to a complex formula.

The local authority provides the cost of municipal waste treatment service to the company. (USD 2.6 million in 1999.) Approximately half of the USD 2.6 million was covered by charges paid by the citizens. The rest was covered from two sources: the annual budget of the municipality and the municipality's share of the previous year's profit (its 49 percent share) in AKSD. (The company profit was USD 1.1 million in 1998, so USD 0.5 million was the municipality's share, making the municipal payment effectively USD 1.3 million.)

Problems with Fees and the Collection Mechanism

Debrecen has had a checkered history with user fees and their collection. In 1991, at the time of the joint venture's startup, a uniform fee of USD 0.47 month per household (as opposed to per capita) was in place.

The municipal council abolished this fee in 1992 and substituted it by an increase in the so-called "communal tax", a general municipal tax levied per households. However, there were so many exceptions and opportunities for circumvention of this general tax that the revenues fell to about 20% of the previous level.

In early 1994, the waste fee was reintroduced. The Municipal Council decided to charge its own collection agency, Angrosz, with the responsibility for collection. Angrosz worked on a commission basis in collecting fees, but its performance was also unsatisfactory.

In 1995, the responsibility for collecting fees was passed to AKSD, which established a separate company, Inkasszo, for the purpose. Initially, Inkasszo's performance was also deemed inadequate, and critics alleged that AKSD didn't really have a strong incentive to recover fees as the municipality paid it in lump sums. However, Inkasszo managed to increase the recovery rate from about 50% to 90% by 1999. It also offered incentives, such as offering people who cleared up their arrears a rebate of 20%. Later, Debrecen introduced service related fees for MSWM, based on the size of waste bins and the frequency of their emptying.

Industrial Waste

AKSD contracts directly with industrial companies for collection or disposal. Alternatively, industries can bring their own waste to the landfill and pay a tipping fee. This fee differs depending on the type of waste, (e.g., for organic waste, construction waste, non-hazardous industrial waste, or the oily wastes qualified as hazardous wastes.)

In most industrial contracts, the clients pay for the quantity of waste handled; a small number of contracts are based on a flat rate. (Bigger waste producers get a discount.) 90% of industrial waste handled by AKSD originates from contracts, the remainder from occasional orders. The quantity of the household waste (62,868 tonnes) originating from Debrecen and environs, placed on the landfill is more than the double of the industrial waste (29,544 tonnes, in 1999).

Nádudvar

The AKSD won the announced tender for collection and depositing wastes of Nadudvar in 1998. The five-hectare, five-meter-high operable landfill in Nádudvar was built from state subsidies, and the AKSD rents from the local authority. The site director is an employee of AKSD, while the rest of the staff are employed by Nádgép Ltd. as subcontractor. Collection is made by a local subcontractor, which rents a lorry equipped with a waste compactor as well as the containers from AKSD.

Nadudvar is a case of “through the back door”, or “if you can’t beat them, join them” regionalization. The town could well have been served directly by AKSD, since it is only about 43 kilometers from Debrecen. However, it got its own landfill from public funds, which it then decided not to operate directly. AKSD took over the operation on contract in pursuit of its strategic objective to dominate the regional market. The construction of the Nadudvar landfill however was probably a waste of money.

Hódmezővásárhely: A.S.A. Hódmezővásárhely Public Sanitation Kft.

Hódmezővásárhely, also in the study area (see Map Section) was A.S.A.’s second largest investment in Hungary. A.S.A. Hungary formed a joint venture with the Hodmezovasarhely Public Sanitation company; the partners’ shares are 62% and 38% respectively. As in Debrecen, A.S.A. modernized the vehicle fleet and committed itself to the construction of a modern landfill.⁸ The municipality’s contribution was in kind, including its old vehicle fleet. The joint venture started operations in 1995. The vehicle fleet “inherited” from the city was

⁸ The new landfill replaced two unregulated landfills in Hodmezovasarhely that have not been recultivated yet.

gradually replaced with a new one. The old vehicles having less efficient features for waste collection were equipped for special functions or kept in reserve.

In addition to collection, transport, and disposal in the landfill, the joint venture also carries out street clearing, junk clearance, closing of unauthorized landfills, and, as is often the case with sanitation companies in Hungary, operating the cemetery. Other residual elements of public sanitation are carried out by the municipality and are put up for public tender regularly (i.e., park maintenance, street clearing in residential areas, etc.).

The contract for constructing the new landfill was awarded on the basis of competitive bidding in which other foreign strategic investors also participated. The landfill was constructed in 1995, and started operations the following year.

The capacity of the landfill is almost 4,000,000 m³. Its lifetime was planned to be 60 years. According to the original plans the first basin was forecast to be full up by the middle of 1999. Due to the smaller than projected quantities, the construction of the second basin has been postponed to 2000. It is equipped for extraction of landfill gases.

The costs of the establishments serving the landfill and of the first block's construction were USD 800,000 in 1995. The investment was financed from bank loan. The USD 1.1 million required for the construction of the second basin will also be financed by bank loans.

The company itself collects the waste fee from the population. About 95% of the population pay their bills regularly, and arrears are only about four percent of billings. However, Hódmezővásárhely's local council subsidizes the service. Under its 1998 budget, the Municipality paid USD 100,000 for financing public sanitation activities. The price supplement was USD 400,000, although this amount changes according to the price formula. The charges originated from the city were about USD 500,000 million. Based on its 2000 budget, the total operation costs USD 1.4 million.

The Company's cost structure is summarized as follows:

Disposal	20%
Transport	35%
Road cleaning	13%
Administration	32%, including interest on loans

Hódmezővásárhely is an exemplary case of a joint venture planned for a regional market where demand fell short of expectations due to the construction of publicly-financed landfills in the potential service area. After A.S.A. constructed its landfill, the municipalities of

Makó (29 km from Hódmezővásárhely) and Szentés (28 km, see Map) received grants to construct their own landfills. The Company estimates that as a result its potential market decreased from about 150,000 to 100,000 people. Nevertheless, Hódmezővásárhely is a qualified success in regionalization. The landfill serves 22 settlements in addition to Hódmezővásárhely. The joint venture carries out collection services for seven of these settlements, and the Csongrád County-owned public company, Csongrád County Public Sanitation Kft. carries out the service in the other 15. The farthest settlement service is only 58 kilometers from the landfill.

Other than the new publicly financed landfills, A.S.A. also finds it difficult to compete with unregulated old landfills in the region. For example, to the east of Hódmezővásárhely, where the company has competed for obtaining the service in several settlements, it is not able to keep up with the prices of the operator of Orosháza, because its landfill is not insulated and otherwise falls short on standards.

The Gyál Landfill: a Case of a Private Initiative Clashing with a Public Monopoly

In the past, the Gyál landfill served Budapest, which accounts for about a third of Hungary's solid waste market. A.S.A. acquired the site from the municipality of Gyál, at a cost of USD 300,000 for 40 hectares, with an eye to penetrating this large market. This was similar to its strategic objectives in Prague and Bratislava where A.S.A. has constructed landfills and is engaged, beyond collection and transport, in more "upstream" activities such as recycling. At Gyál, the company finished the first phase of a modern EU-conforming landfill at a cost of about USD 2.8 million. However, the strategic objective was denied because of the strong monopoly position and practices of FKF Rt., Budapest's service provider for MSWM.

According to a Budapest local decree issued in September 1998, only FKF and companies authorized by FKF are permitted to engage in Budapest's MSWM. The legality of this decree is questionable, but it has not been contested in court to date. (MSWM has become a profitable activity in Budapest: FKF's profits increased from USD 14,000 to about USD 2.3 million in 1999. The privatization of the FKF, which had been a subject of expensive consulting in 1997–98, has been put on indefinite hold since the 1998 municipal elections. For its part, A.S.A. refused to attempt to enter into a direct contract with FKF on the grounds that it considers the terms offered unacceptable.

Budapest, after having rejected offers to construct a second incinerator, has built two new landfills on land owned by the municipalities of Dunakeszi and Pusztazámor. Gyál is on a third direction, east from the city. A.S.A.'s Gyál landfill is thus relegated to the local market of Gyál and surrounding small settlements, as well as to some Budapest contracts predating the 1998 decree.

A.S.A.'s View on the Hungarian Solid Waste Market

A.S.A. executives have straightforward opinions about the current status of the Hungarian solid waste market. (Private firms rarely tackle opinion on broader issues, which is why the authors consider it important to reveal such. The accounts below are based on interviews and public statements by the interviewees.)

A.S.A. has invested less than it had originally intended in Hungary. Development of the waste management market has lagged behind the company's expectations. This is in part attributed to inadequacies in the legal framework—especially poor local regulations and absence of waste legislation at the national level until very recently—and the poor state of municipal finances. Company management points out the more favorable business environment of the Czech Republic and Slovakia, where government policies resulted in the closure of most substandard landfills and dumps. (In Hungary, high-cost modern landfills have to compete with unregulated, low-cost disposal sites.)

A.S.A. is particularly critical about the government's subsidized program of landfill construction. On the Alföld, a number of landfills were constructed within the potential market area of Debrecen and Hódmezővásárhely, respectively. This has directly cut into A.S.A.'s markets. Subsidies result in unequal possibilities on the market. The municipalities that have obtained these grants are generally not interested or not in a position to modernize their transport and collection systems. Instead, they are content to provide low cost, low quality service, and do not need to recover the costs of landfill capital outlays. Meanwhile, they can offer low cost service in the localities, which worsens the likelihood of recovery for private investments.

In A.S.A.'s view, landfills are located with an excessive density as a result of the state subsidy system. This results in inadequate capacity utilisation. As a consequence, charges typically do not even cover operation costs, not to mention recovery of capital costs. Municipal authorities, taking advantages of the favourable subsidy system, want to solve their waste treatment problems by building landfills for a period of 15–30 years using the state's "free money".

Being the only company that has constructed landfills without government support, A.S.A. also claims that other Western investors, who had accessed such funds directly or indirectly through their partner municipalities, are also in a more favorable market position.

In spite of these criticisms, A.S.A. is committed to stay in Hungary. It hopes that with the improvement of the legal environment it will be able to penetrate the Budapest market. However, as long as the government subsidy programs continue in their present form, it sees big difficulties to establish new partnerships with municipalities along the pattern of the first half of the 90s as in Debrecen and Hódmezővásárhely.

Case Study 2: Rethmann in Szolnok and Environs

Introduction

Szolnok is a town of about 80,000 inhabitants in the Central Plains region of Hungary, on the river Tisza. It is county seat of Jász-Nagykun-Szolnok County.

Szolnok's case in solid waste management is of special interest, as Szolnok was one of the earliest cases of a professionally conducted open tendering process for establishing a public-private partnership in solid waste management. It also has other distinguishing features; for example, it is an example of a rare instance when a joint venture assumed the responsibility for individually collecting fees from the population, and did so successfully.

Early after the political transition, Szolnok's municipal government embarked on a strategy of transferring municipal services to public private partnerships. Szolnok entrusted a local auditing and consulting company, Hozam Kft., with carrying out the strategy of forming public private partnerships, among them for privatizing solid waste management. The joint venture between the municipality and Rethmann, a German company specialized in waste management, is one of the results of this strategy. Another example, more significant in terms of investment size, was the construction of a municipal waste water treatment plant, which was awarded to a private consortium. By 1996, most municipal services were privately operated. The town attracted about USD 23.4 million in investment via public private partnerships.

The Tendering Process

In 1993, the municipality transformed its former operating unit for solid waste management into a one-person limited liability company. (Such operating departments were parts of large municipal companies which were common in the larger Hungarian towns before the transition, and under their constitution, were not authorized to increase their capital or form partnerships.) Szolnok's transport equipment was obsolete, and its landfill operation inefficient. The landfill, however, did not meet modern environmental standards. During 1993, the municipality got several offers from private companies to manage waste collection and landfilling. In the same year, Szolnok mandated Hozam Kft. to propose alternate strategies, and eventually to conduct the entire process. The main investments which the prospective joint venture partners were asked to undertake were: (1) the replacement of the transport fleet, within about one and a half years, and (2) a new landfill, to be built within three to five years,

The invitations to bid offered flexibility with regard to ownership structure; bidders were asked to acquire not less than 51%, but no more than 74% of the prospective joint venture.

This signaled the municipality's resolve to transfer management and ownership control to the joint venture partner, and yet conserve the minimum ownership stake necessary, under Hungarian law, to exercise veto rights over certain key decisions, (e.g. changes in the bylaws, capital increases, etc.). The concession period was stated as 25 years. (This, however, does not mean dissolution of the joint venture in 25 years; in fact, by then the joint venture would presumably be in a strong position to win further concessions).

The tender documentation called for specific offers and statements on some 30 major items, including:

- investments in machinery and equipment, stating the type of equipment and the scheduling of investment;
- a commitment to build and operate a modern landfill;
- the technology for residential solid waste collection;
- method of collecting fees;
- a financing plan for the investment,
- a five year business plan.

Whilst the Municipal Council reserved the right to choose the successful bidder, the bids were evaluated by Hozam Kft, by a team of legal, technical, and business experts. Four foreign companies submitted valid bids. These were evaluated using a point system giving a weighted evaluation on the components of the offer (with a maximum 100 points; the ratings of the four companies ranged approximately between 50 and 85 points).

The municipality declared the winner, but retained the right to negotiate with the runner up bid as well. The negotiations lasted several months. Eventually, the highest rated bidder, Rethmann Recycling of Germany, was chosen as the joint venture partner. Rethmann is a large specialized company in waste management that grew from a family firm. It has operations in a number of European countries, including the Czech and Slovak Republics and Poland, and also in Australia and the USA. Szolnok represents Rethmann's first venture in Hungary.

The ownership structure emerged as follows: 51% Rethmann, 45% the municipality of Szolnok, and 4% shared between the County Government and the Regional Association of Municipalities.

Hozam Kft. was engaged to draft and negotiate the contracts with Rethmann which included the bylaws of the joint venture, the shareholders' agreement, and separate contracts for each

of the services, including the fees charged and the methods of payment for each of the services, (e.g. for distinct services such as park maintenance and road maintenance and cleaning. The joint venture's fees for these contracts are defined as unit rates per area served, or fees against specific tasks to be performed).

Company Operations

Rethmann Recycling Szolnok started operation in October 1995. The company serves about 30,000 individual dwellings in Szolnok, as well as residential waste collection in some neighbouring small municipalities.

The Szolnok contract is rather unusual in that the joint venture is responsible for collecting the fees from the population, which is their principal source of revenue from residential waste collection. At first, Rethmann was reluctant to accept this condition, which had been stipulated on the tender. But eventually an agreement was struck whereby shortfalls of revenues were to be shared between the municipality and the joint venture. (The company now employs four people for fee collections. "Overdues" are now only about two percent of dues).

The residential garbage fee in Szolnok is levied on the basis of residential space, i.e. practically on the number of rooms per household. The rate per room in 1997 was USD 0.6 + VAT per month. At an average of three rooms per apartment, the fee comes to about USD 21.96 + VAT per household per year. This is direct income to the company, which as stated above, collects all such fees).

Other activities included in the contract are:

- road and street cleaning (performed once a week by machines on roads, and manually on street walks and bus stations);
- winter snow removal and anti-skidding treatment of roads;
- park maintenance and the care of "green areas" (on about 120 hectare, includes care of lawns and city gardens);
- maintenance of the machinery and equipment,
- traffic regulation and maintenance of road signs.

The company's income was USD 2.3 million in 1997 and USD 3.6 million in 1999, the proportion of income from solid waste management, was respectively 54% and 46%. In 1997, revenues by activity were broken down as follows:

Solid Waste Transport and Disposal	54%
Road Maintenance and Cleaning	15%
Park Maintenance	9%
Urban Sanitation	3%
Other	19%

(“Other” includes disposal of liquid waste from septic tanks, operation of parking lots, protection against flooding, and disposal of certain hazardous wastes under construction and maintenance activities.)

Residential waste collection operates with four imported trucks equipped with compactors, and one vehicle for lifting containers (Multilift). Costs have been reduced, and are now rising less than inflation). The company now employs 140 people, of which 110 are physical laborers.

For the last three years, Rethmann has started selective collection on a pilot basis for paper, iron, glass, and batteries. For example, the company placed 25 special containers for the collection of colored and non-colored glass at various points in the city. Paper is mainly collected from schools and institutions. Special paper bins for the population’s use have also been deployed. These activities have been running at a small loss in recent years. But Rethmann believes that in the long run these activities will be necessary, particularly once a new regional landfill is constructed some distance away from Szolnok.

Regionalization and Rethmann’s Role in Kunszentmárton

Summary

As was the case for A.S.A.’s joint ventures with Debrecen and Hódmezővásárhely, Rethmann also embarked on its Hungarian venture with the strategic objective of regionalizing MSWM around a core population center. It originally planned to serve a total population of 150,000 to 200,000 in a radius of about 50 kilometers around Szolnok. To date, however, Rethmann’s collection and transport service outside Szolnok is quite limited. In addition to the 80,000 inhabitants of Szolnok, Rethmann services some half a dozen surrounding settlements with a total population of 25,000. (There were no incentives for more distant settlements in the county to contract with Rethmann, as they all have their own unregulated dumps or landfills, and transporting waste to Szolnok would have raised costs.)

In addition to the local unregulated landfills, Rethmann, as A.S.A. in the previous case study, found itself competing with publicly funded landfills in its potential sphere of operations: in Kunszentmárton, Szentés, Nagykörű, Karcag, Jászapáti and Kőtelek. And similar to A.S.A.'s taking over the Nádudvar landfill, Rethmann also engaged in a venture for regionalization “by the backdoor” by taking over the management of the close-by Kunszentmárton landfill, which had been built by public grants. (This case is described below.)

In 2000, Szolnok and the joint venture applied for a large ISPA, which would *inter alia* include the construction of the regional landfill, and also promote the regionalization of the service in the county and beyond. (Some observations on this application, which appears to have been approved by the European Union, conclude this case study on Szolnok.)

(ii) Rethmann's Operations in Kunszentmárton

Kunszentmárton is a small town of 12,000 inhabitants about 45 kilometers south of Szolnok (see Map 4). Construction of the landfill in Kunszentmárton started when the previous dumping ground was getting full. As the problem became more urgent, companies dealing with waste incineration approached the local authority. But their offers could not be taken seriously, as the investment costs were prohibitive (up to USD 4.7 million).

Kunszentmárton then approached the settlements nearby to apply jointly for government grants. Their application was submitted to the Environmental Fund tender in 1997 as a common enterprise of 14 settlements. Together with the small settlements nearby, they managed to reach the requisite 20,000 residents; and after Tiszaföldvár (northeast of Szolnok, 27 kilometers from Szolnok and 18 kilometers from Kunszentmárton) also joined as a transporter, the number grew to 40,000. Only Kunszentmárton committed capital; the others only gave their names and their declaration of intent to join to the application. After the grant had been approved, an invitation for tenders for landfill construction was issued. The tender was won by ALTERRA, a Hungarian branch of a multinational construction company.

However, Kunszentmárton had run out of the money put aside for the purpose before the investment was completed. At that point, the local government decided to issue a tender for the provision of services of waste management and for the operation of the landfill, with the condition that the winner should finance the completion of the landfill construction. The invitation of tenders was published in a newspaper, and a legal advisor was engaged with conducting the tender process and bid evaluation. Rethmann won the tender—in competition with A.S.A. and a third company—partly due to its offer of USD 260,000 for the completion of the construction. The total cost of the landfill came to USD 1.87 million, of which USD 1.59 million was financed by the government grant.

Rethmann received the right for waste collection and landfill operation for 25 years. However, it subcontracted collection and transport to the local Public Sanitation Ltd of Csongrad County, who had carried out the service in Kunszentmárton before. Rethmann retained the operation of the landfill.

Rethmann established the price of collection, transport, and disposal at 2.48 USD per month per household. However, the local authority considered this price to be politically unacceptable, determined the fee for residents at 1.87 USD per month (a 50% reduction can be applied for on the basis of social situation). According to the contract between Kunszentmárton and Rethmann, the latter is paid in total, once a month, on the basis of the 2.48 USD per household per month as calculated by Rethmann. The annual sum of difference between the USD 1.87 and the USD 2.48 monthly fee is covered by the local budget. On the basis of this structure, the local authority is obliged to spend about USD 90,000 a year on subsidizing waste management. Residential fees are established in a local authority decree every year. (The fees are collected by the local water and public utility.)

Waste is collected from residents once or twice a week, even from households which are in arrears. The Csongrád County Sanitation Company collects and transports waste from Kunszentmarton, Tiszafüred and six smaller participant settlements. Some other settlements transport their waste on their own as they have not reached an agreement yet. (In the case of three other applicant settlements, there is no data concerning waste management services at all.⁹)

Szolnok's Landfill and its ISPA Application

As stated above, Rethmann committed itself to build a modern landfill within three to five years after the contract was signed. However, the construction of the landfill was delayed, in part because of legal difficulties; the Ministry of Regional Development refused the permit to convert the site chosen. Rethmann and the municipality agreed to postpone landfill construction. The existing landfill at Szolnok, though it did not meet sanitary and environmental standards, was still serviceable for a few years.

⁹ In Kunszentmárton, 20–40% of the residents is involved in regular transportation of waste. It is impossible to reach a higher ratio because two third of the roads in the settlement are unpaved. There are containers placed at the beginning of these roads but residents do not always bring their waste into these. Generally, 110-litre dustbins are used both by residents and by smallholders, blocks of condominiums use 1,100-litres containers. Dustbins and containers are provided by Rethmann.

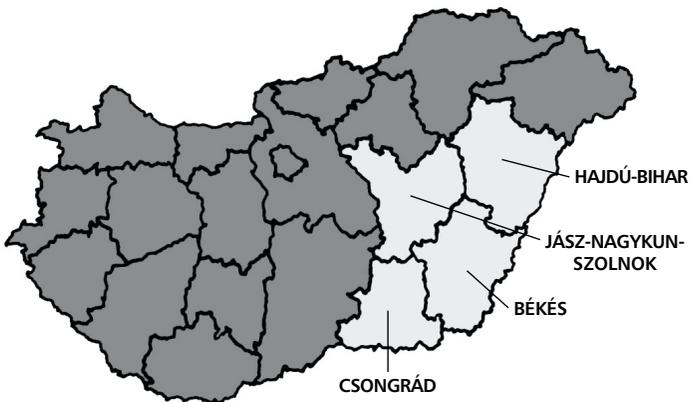
In 2000, the municipality and Rethmann seized on the new European Union pre-accession facility ISPA to prepare an application for an integrated regional waste management project. A new site has been selected, some 35 kilometers from Szolnok. According to the project plans, the new landfill would serve a population of about 200,000 people, in a 50-kilometer radius around the new landfill. (One of ISPA's conditions for financing is that projects have a regional scope.) The cost estimate for the landfill is USD 14 million. ISPA is expected to finance 75% of costs as a grant; the municipality would cover 10–15%, with the rest coming from the state.

In conclusion, and given the concern of the present study with respect to the effects of public subsidies on private investment, a number of issues related to the ISPA financing appear relevant. ISPA now appears on the regional scene as an international grant-offering body on a large scale for big environmental projects, mainly for waste water treatment and solid waste management. In Hungary, AKSD in Debrecen has also submitted an ISPA application. In Hungary, it appears that the private partners of the respective municipalities will also be principal beneficiaries of these large grants, at least in waste management.

In the case of Szolnok, it is safe to assert that the cost of the planned landfill is much larger than what Rethmann and Szolnok would have committed, even in combination with national grant funding. *However, the company is no doubt happier to get for 100 the gold-plated version (of which 75% is grant) than to spend only 25 of its own money for the less ambitious project to which it had committed in the first place.*

It is not unlikely that ISPA will finance a few showcases of landfills equipped to Western European standards. Such a jump in both standards and investment costs is unlikely to be replicable countrywide. Furthermore, just because a project is conceived on a regional scale does not mean that the constraints to regionalization will be automatically lifted. Rethmann will still face the same problems in attracting new municipalities in its fold and in competing with other publicly funded landfills as previously. *In order to gain the market of 200,000 additional users of the potential regional service, Rethmann would presumably have to put out of business the already constructed landfills in its vicinity. Thus a large landfill built with an international grant will compete with small landfills built with national grants, and in the process the principles of cost recovery and financial viability may lapse. In fact, the hypothesis seems worth exploring that ISPA grant funding will add another layer of over-capacity and inefficient resource allocation on the already crowded patchwork of landfills in the country, and certainly in the Study Area.*

Map 1
The Four Counties of the Study Area



Map 2
The Largest Towns in the Study Area



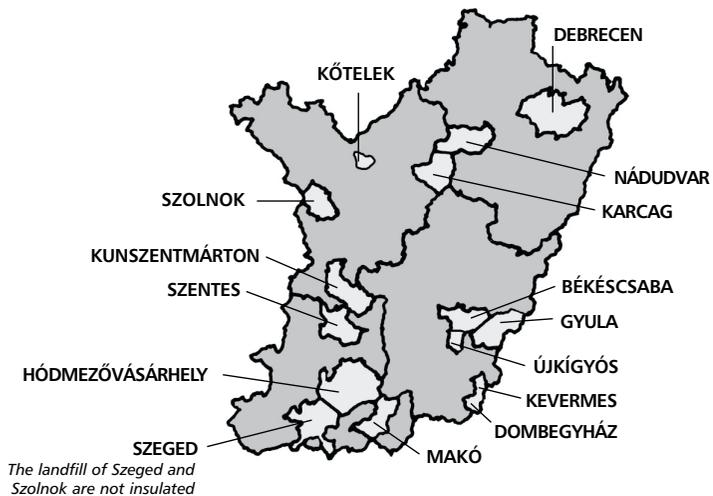
Map 3
Landfills with Majority Private Ownership



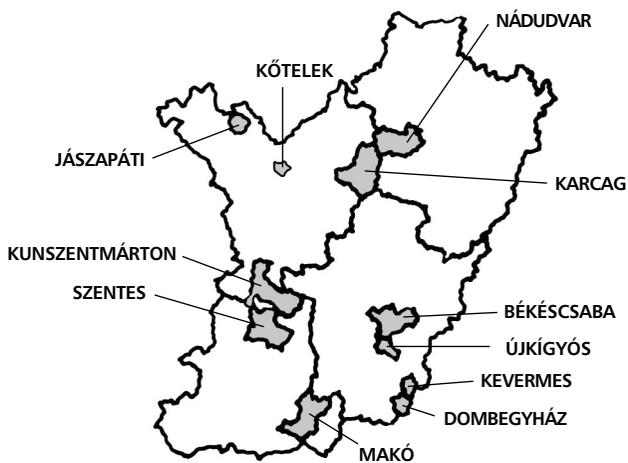
Map 4
Privately-operated Landfills



Map 5
Towns and Settlements Included in the Study

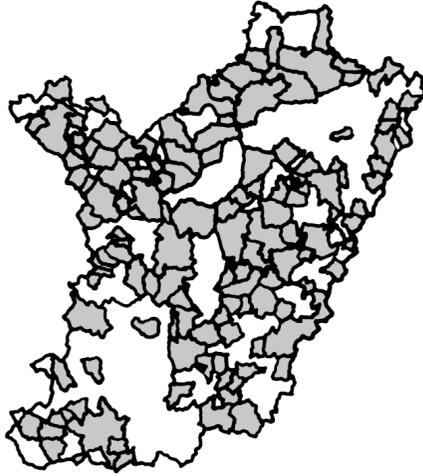


Map 6
Government Supported Landfills in the Study Area



Map 7

**Settlements Served with Uncontrolled Dumps and Landfills which do not Meet
Regulatory Standards**



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