Decentralised Composting as an Approach towards a Sustainable Biowaste Management in Austria and Slovakia

(Project COMPASK)

Final Report 2005

ÖGUT
Österreichische Gesellschaft für Umwelt und Technik

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Project homepage **http://www.oegut.at/themen/moe/compask.html** (German)
http://www.oegut.at/themen/moe/compask_e.html (English)

Executive Summary

The EU-Landfill Directive (1999/31/EC) foresees a significant reduction of biodegradable waste disposed at landfills within the next years. Meeting this requirement is related to restructuring of the national waste managements, and thus to investments, in the EC country members. Especially for the new EC countries, the financial aspect is a serious challenge, thus biowaste management solutions of both environmental and economic soundness are needed.

The current project proves the advantages of the biowaste garden composting as a most adequate solution at the example of a municipality in Slovakia, by applying the pioneer know how of Austria in this field. **The goals of the project** are to demonstrate the practical integration of cost-effectiveness into the environmental protection and to create the needed prerequisites for introducing the garden composting on municipal level in the Slovak pilot municipality. The project region includes Greater Vienna – Lower Austria (Bruck an der Leitha) – Greater Bratislava (municipality of Sväty Jur, Pezinok District). The pilot Slovak municipality, Sväty Jur, is located 13 km northwest of Bratislava and is, in terms of its economic and residential structure, the counterpart of Bruck an der Leitha in Austria or to the outer districts of Vienna.

The project consists of **a preparatory and an implementation phases**.

The **preparatory phase** includes the elaboration of waste management analyses of the project region, of an opinion poll in the pilot Slovak municipality towards the public attitude to garden composting and the willingness to practise it, know how transfer and experience exchange, and elaboration of an implementation plan and a concept.

The **implementation phase** includes the initiation of participative and awareness raising processes in the pilot municipality of Sväty Jur. The first relates to the foundation of a voluntary Steering Group of active citizens. After an initial phase of training in the basics of PR work and biowaste garden composting, they have initiated a constructive dialog with the municipal administration towards establishing a sustainable waste management in the municipality.

The awareness raising relates to initiation of school and kindergarten projects, so that biowaste garden composting is integrated in both the education and in the waste management of these institutions. The school project is coached by a twinning school project in two Viennese schools. The multiplicator effect of the Steering Group, the schools and kindergartens in Sväty Jur will be integrated in the biowaste management activities of the municipal administration after the project conclusion.

The **key outcome** of the project can be summarised as follows:

I. Separate waste collection in Sväty Jur refers to only metal scrap, glass and waste paper. Biowaste is not separately collected but landfilled together with the residual waste.

II. 33% of the households in Sväty Jur perform garden composting for their garden biowastes, and further 28% - for both kitchen and garden biowaste.

III. The citizens of Sväty Jur prove a positive attitude towards the biowaste garden composting: 79% of the households would practise, respectively go on practising, garden composting for their entire household biowaste if the waste fee would allow for a financial benefit.

IV. The current waste fee in Sväty Jur is paid per capita, and not per waste mass and fraction generated. There is lack of financial incentives for the citizens to avoid waste generation, i.e. to perform biowaste garden composting. The financial incentive (waste fee reduction) appears the key factor for establishing a sustainable biowaste management.

V. The municipal administration of Sväty Jur is currently not able to introduce adjusted waste fees, since the private waste disposal company-monopolist delivers no reliable data on the waste fractions of the municipality. Biowaste data lack completely. Without knowledge of the real (bio)waste generation, no adequate waste fees and benefits can be established. The contract with the waste disposal company is not subject to alterations or cancellation.

VI. Herewith, one of the key problems in the Slovak waste management is identified, namely the phenomenon of "too much privatisation and too little control". There is a clear need of structures such as the waste unions in Austria, authorised to establish waste fees and to control the activity of the private waste disposal companies in terms of quality standards.

VII. Biowaste garden composting has been introduced successfully in two schools in Vienna and in the school in Sväty Jur. The school in Sväty Jur has voluntarily begun to not only garden compost its biowaste, but also to perform a full-scale waste separation according to the Austrian practice. The project as well the training of the pupils is coordinated by a member of the Steering Group. All training materials have been prepared and translated into Slovak by Austrian project partners. The initiation phase has ended with a school exchange visit in Austria.

VIII. Awareness raising activities have been initiated in the two kindergartens in Sväty Jur. The children are trained in the basics of waste separation and biowaste composting. The parallel implementation of the project in the kindergartens and the school allows for securing a continuous awareness building process among the young people in Sväty Jur.

IX. The school and kindergarten projects have enjoyed a great success and have proved that the younger generations in Sväty Jur are open to and willing for sound environmental behaviour. Also, the initiated school cooperation between the Austrian and the Slovak pilot regions contributes to the strengthening of future regional relations and contacts.

X. The foundation of the voluntary Steering Group and their dialog with the municipality has resulted in a concrete solution for the prospective waste management in Sväty Jur. The launch of a participative process in Sväty Jur has induced initiative also in the municipal administration, and concrete solutions for further action have been found (cr. XIII).

XI. The members of the Steering Group are aged between 20 and 55. The success of their integration on a voluntary basis shows also that despite the negative experience with "voluntary" activities in the past of a post-socialist country like Slovakia, participative processes find a very fruitful base for their further development there.

XII. The project has gained a worldwide positive image among experts and interested public with its practical orientation, original approach and simple technology.

XIII. In spring 2005 (**i.e. after the project conclusion**), the municipal administration and the Steering Group will install a voluntary "pilot street" in Sväty Jur. All waste fractions will be collected separately. After gathering plausible data, the municipal administration can introduce adjusted waste fees and expand the separate waste collection onto the entire municipality. The school and the kindergartens will be advertised as "the pattern to follow".

Summary

An important legal framework for the waste management in the EU member states and the accession countries is the EU-Landfill Directive (1999/31/EC). It requires a significant reduction of biodegradable waste disposed at landfills within the next years, considering the landfill biogas generation (a notable contribution to the global warming potential) and the chemical pollutant loads of leachate, endangering the quality of ground- and drinking water.

Thus, new management options are required in order to meet as soon as possible the highest ecological and economical criteria. In contrast to incineration and landfilling, biowaste composting allows for a closed loop recycling and for shifting towards a sustainable material flow. Centralised composting, however, presumes significant investments for collection and transportation logistics as well as for composting plants. An option of both environmental and economical soundness is offered by the biowaste garden composting.

Austria has enjoyed for decades the role of the European leader in the field of biowaste management and in particular of garden composting. **The overall goal** of the current project is thus to apply the successful Austrian know how in Slovakia: the project aims at demonstrating the practical integration of cost-effectiveness into the environmental protection in an accession country, and at creating the needed prerequisites for introducing the garden composting on municipal level in the Slovak pilot municipality. **The project region** is herewith defined as Greater Vienna – Lower Austria (Bruck an der Leitha) – Greater Bratislava (municipality of Sväty Jur, Pezinok District). The pilot Slovak municipality, Sväty Jur, is located 13 km northwest of Bratislava and is, in terms of its economic and residential structure, the counterpart of Bruck an der Leitha in Austria or to the outer districts of Vienna.

Within the two years of project execution, the following **project activities** have been performed. In a first, **preparatory phase**, a co-ordinated technology transfer and experience exchange with a view on the differing economic and socio-political background and environmental practice has been performed from Austria to Slovakia. Afterwards, a practical promotion of the biowaste garden composting at municipal scale in Sväty Jur has been undertaken.

In parallel, an analysis of the waste management situation, the goals and the waste billing models in the project region, i.e. in Vienna, Lower Austria, Slovakia, Pezinok District and Sväty Jur has been completed. Simultaneously, an opinion poll in Sväty Jur on the acceptance of the biowaste garden composting has been performed, to serve the development of later PR campaigns in Sväty Jur addressing the introduction of biowaste garden composting. The preparatory phase has ended with elaboration of an implementation plan and an implementation concept on establishing the biowaste garden composting in Sväty Jur.

In the second, **implementation phase**, the biowaste garden composting has been introduced at key multiplicator locations, such as the school and the kindergartens. In addition to the initially planned project scope, also two long-term processes have been initiated, namely a participative process and an awareness raising process, both in the field of (bio)waste management, but related to different generation structures. These include the

foundation of a voluntary Steering Group on garden biowaste composting and its cooperation with the municipality, and the integration of the garden biowaste composting in the kindergarten and school education, with a following cooperation between a Viennese school and the school in Sväty Jur.

The **key project outcome** can be summarised, as follows:

Know how transfer Austria - Slovakia

The urban and economic structure of the pilot municipality of Sväty Jur is highly advantageous in terms of introducing the biowaste garden composting or the biowaste management structure of Lower Austria, i.e. offering the choice between biowaste garden and centralised composting.

However, the Austrian experience is not fully transferable onto the pilot Slovak municipality, since in Slovakia, waste collection and disposal is privatised, but controlling structures lack, such as the Austrian waste management unions. This results in the negative effects of uncontrollable quality of the waste separation and disposal as well as in unreasonable waste fees.

Public attitude in Sväty Jur towards biowaste garden composting

33% of the households in Sväty Jur compost their garden biowaste, and further 28% compost both their garden and kitchen biowaste. Only 5% consider it useless work. The rest have no conditions for biowaste garden composting.

The citizens of Sväty Jur prove a positive attitude towards the biowaste garden composting: 62% of the households would bring their biowaste to common biowaste composters in Sväty Jur, 55% would practise, respectively go on practising, biowaste garden composting if there were a financial incentive (waste fee reduction), and 79% - if the waste fee were adjusted to the waste amount generated.

However, there is lack of own initiative among the citizens and of motivation for positive changes in the waste management. 62% of the households expect the municipality to play the lead role if changes in their waste behaviour are required. A financial incentive (waste fee reduction) appears the key factor for the citizens to willingly practise garden composting for their household biowaste.

Only single citizens show an active civil position and an own initiative for action. Within the project, these have been organised in a voluntary Steering Group. A key function of the Steering Group has been a dialog with the municipal administration by active participation and steering of the decision-making processes in the municipal waste management (cr. further below).

Separate waste collection in Svätý Jur

Separate waste collection has been already introduced in Svätý Jur, however only for the fractions of glass, paper and metal scrap. Biowaste is not separately collected, but in a mixture with the residual waste.

Biowaste generation in Sväty Jur

The waste collection and disposal in the Pezinok District is fully privatised and performed by a monopolist private company. The company collects the entire waste and separates it afterwards. The company returns to their client - the municipality - information on the waste fractions in their municipal waste. The results in Sväty Jur prove, however, the unreliability of this system: biowaste data lack completely. The biowaste generation for Sväty Jur has thus been calculated. Since in 2002 a new waste catalogue was adopted in Slovakia, two biowaste average values are estimated: for the period 1999-2001 and for 2002. For the calculation, the percentage of the biowaste fraction (38%) in the municipal waste in Slovakia is used. The average biowaste generation in Sväty Jur is thus ca. 364,33 t or 78,33 kg/cap*a for 1999-2001, and ca. 481 t or 107,6 kg / cap*a in 2002, all disposed of by landfilling.

Herewith, one of the key problems in the Slovak waste management is identified, namely the phenomenon of "too much privatisation and too little control". There is a clear need of structures such as the waste unions in Austria, who are authorised to both establish waste fees and to control the activity of the private waste collection and disposal companies in terms of quality and waste management standards.

Municipal waste fees in Sväty Jur

Waste fees in Sväty Jur are paid per capita, and not per mass of generated waste. The emptying intervals are no subject to change and thus do not consider the filling grade of the household waste containers. The current waste fees cover only waste collection (8,4 Euro/cap*a in 2002; 9,9 Euro/cap*a in 2003). Waste treatment is financed by the municipality (37,6 Euro/t*a in 2002) and is executed by the private waste disposal company.

If the progress towards a sustainable waste management is desired, the first step should be an adjusted and reasonable waste fee system, supporting also waste reduction and recycling at the source of origin (e.g. biowaste garden composting). But without exact knowledge of the waste and waste fractions generated in the municipality, no reasonable and cost-effective waste fees are possible to calculate.

Biowaste treatment in Sväty Jur

The biowaste from Sväty Jur collected by the waste disposal company is landfilled. In the next years, the local agriculture cooperative intends to collect and centrally compost the biowaste from Sväty Jur. In 2004, the site to serve as a composting plant is being prepared. There is no specific information on the timetable, nor on the contract modalities among the municipality, the current waste disposal company and the agricultural cooperative in Sväty Jur. Introducing the system of two options for biowaste composting, i.e. garden and centralised composting, appears a reasonable solution to ensure the environmentally friendly biowaste management for the households who do not have a possibility to practise biowaste garden composting. This system however can induce a positive effect only if the waste fee system allows financial savings for the households having opted for biowaste garden composting.

Implementation Plan for establishment of the biowaste garden composting in Sväty Jur

The Implementation Plan consists of a waste management analysis for Slovakia, the Pezinok District and Sväty Jur; waste fee analysis for Sväty Jur and an Implementation Concept. The main outcome are the identification of the key problems of the biowaste management in Sväty Jur (lack of reliable data; unreasonable waste fees) and a basic concept (activities and timetable) for the Steering Group and the municipal administration on how to introduce the biowaste garden composting on municipal level.

Initiation of public participation and awareness raising processes in Sväty Jur

The initiation of these two processes in the pilot Slovak municipality presents the core of the project and its key achievements.

Initiation of public participation processes in Sväty Jur: Steering Group on garden composting

There has been a need of a “driving force” in the municipality, so that a sustainable behaviour model within the municipal biowaste management is followed by the citizens. This need has been responded to by building a voluntary Steering Group on garden composting in Sväty Jur in April 2004. The activity of the Steering Group has included a training phase (biowaste garden composting at multiplicator locations, PR work basics, etc), and an implementation phase. In the latter, an own Action Plan for further activities has been developed, the municipal administration has been integrated into the project, and the Steering Group has begun to actively take part in the decision-making process on how the municipality should further develop the (bio)waste management.

Since the members of the Steering Group are aged between 20 and 55, the success of their integration on voluntary basis shows also that despite the negative experience with “voluntary” activities in the past of a post-socialist country like Slovakia, participative processes find a very fruitful base for their further development there.

The launch of a participative process in Sväty Jur in the field of the biowaste management has induced initiative also in the municipal administration. The activity of the municipal administration has been accelerated, and concrete solutions for further action has been found (cr. last paragraph in this Chapter).

Awareness raising: Initiation of school and kindergarten projects and cooperation

Biowaste garden composting has been introduced successfully at two schools in Vienna and in the school in Sväty Jur.

The school in Sväty Jur has voluntarily begun to not only garden compost its biowaste, but also to perform a full-scale waste separation according to the Austrian practice. The project as well the training of the pupils is coordinated by the teacher who is a member of the Steering Group, supported by a special employee of the school. All training materials have been prepared and translated into Slovak in by the Austrian partners. The materials have been handed over to the municipal administration, the local school and the local kindergarten as well as to the Steering Group. The electronic version has been set online in the school intranet, so every teacher or pupil has free access to the information. The initiation phase has ended with a school exchange visit in Vienna.

In the autumn of 2004, awareness raising activities in the field of biowaste management were initiated in the two kindergartens in Sväty Jur. The children are trained in the basics of waste separation and biowaste composting in a playful manner, so that the idea has been conveyed to them that biowaste is a valuable good and not "waste". Also, the parallel implementation of the project in the kindergartens and in the school allows for securing a continuous awareness building process among the young people in Sväty Jur.

The school and kindergarten projects have enjoyed a great success and have proved that the younger generations in Sväty Jur are open and willing for sound environmental behaviour. Also, the initiated school cooperation between the Austrian and the Slovak pilot regions contributes to the strengthening of future regional relations and contacts.

Publicity

The project has gained a worldwide positive image among experts and interested public with its practical orientation, original approach, simple technology and the municipality being the target group. Along with the project homepage, a number of national and international project presentations and publications have been realised.

The **planned municipal activities in Sväty Jur after the project conclusion** envisage the following development:

The key problems in the (bio)waste management of Sväty Jur are the lack of reliable data and the complete lack of systems for control over the private waste disposal companies.

Thus, the municipal administration of Sväty Jur and the Steering Group on biowaste garden composting will establish a „pilot street" in Sväty Jur in the spring 2005. This will be a short street with a single house structure where the citizens will – on a voluntary base – strictly separate their waste over a longer time period. Once reliable data on the waste fractions and mass generated in Sväty Jur are gathered, new waste fees will be calculated and introduced. The fees will allow for financial benefits for those households who opt for biowaste garden composting instead for the biowaste bin and the centralised biowaste composting. The introduction of the new fees and of the two optional biowaste treatment systems (garden and centralised composting) will be accompanied by PR and information campaigns in the municipality. Within these, the municipal administration will advertise the pioneer example of the Steering Group, of the school and of the kindergartens as a pattern to follow.

In the same time, negotiations towards alteration of the existing contract with the current private waste disposal company are pursued. The goal will be to ensure separate waste collection and reliable data for the whole municipality.

Project Role and Benefits for the Austrian Project Partners and Financiers

The COMPASK project relates to a large extent to a know-how transfer to the Slovak project region. Since the latter is presented in more detail in the chapters devoted to the project implementation in Slovakia, the current summary emphasises the role and the benefit of the project for each Austrian project partner and / or financier. The Austrian project partners and funding institutions are listed below.

City of Vienna – Magistrate Department (MA) 48 – Waste Management, Street Cleaning and Car Pool

The City of Vienna – MA 48 participates in the project as both a project partner and a national co-financier. The MA 48 disposes over profound knowledge and experience in the field of municipal waste and biowaste management. Its **role in the project** thus mirrors the key competence of the MA 48 “Unit of Biowaste Management and Special Projects”, being:

- Providing with expert knowledge in biowaste management on municipal level for the City of Vienna
- Providing with data on the waste and biowaste management of the City of Vienna for the comparison with the pilot region in Slovakia
- Providing with two Viennese schools for the school project implementation
- Providing with waste counsellors for the school project in the City of Vienna
- Providing expert support for information preparation and distribution
- Providing support within the experience exchange with the pilot region in Slovakia
- Providing support for the project presentations in Vienna and in the pilot region in Slovakia
- Providing part of the project national co-funding

The **main benefit for** the City of Vienna – MA 48 resulting from the COMASK project can be summarised, as follows:

- An increased political and professional presence of the City of Vienna in Greater Bratislava
- Initiation of an awareness building process with a positive long-term effect for the City of Vienna: an implemented initiative for sound awareness raising in the schools towards sustainable waste management in two pilot schools in the City of Vienna
- Detailed manuals available for further implementation in other schools in the City of Vienna
- Gathered new experience in awareness building towards environmental protection and waste management by the results of an opinion poll carried out in the Slovak project region. The results are of use for PR work in other waste management projects in the City of Vienna
- Confirmation of the existing Viennese approach that garden composting is a reasonable solution for the outer districts of Vienna in terms of sustainable biowaste management
- A contribution to the Viennese approach towards waste prevention and thus a forward-looking waste management.

Province of Lower Austria - Provincial Government Office of Lower Austria - Department of Environmental Economics (RU3)

The Provincial Government Office of Lower Austria - Department of Environmental Economics (RU3) - participates in the project as both a project partner and a national co-financier. The Provincial Government Office of Lower Austria - Department of Environmental Economics (RU3) – enjoys a proven pioneer role in the field of biowaste management and all levels of biowaste composting especially in rural areas as well as the related PR work for the population. Its **role in the project** refers to know how transfer related to the decentralised biowaste composting and thus corresponds to the key competence of the Provincial Government Office of Lower Austria - Department of Environmental Economics (RU3). Since 1986, biowaste garden composting has been supported on three levels:

- PR work including folders for the private households, training of compost experts, a waste and compost hotline, and a newspaper “Environment and Municipality”
- Introduction of a waste fee reduction for households maintaining biowaste garden composting
- Technical support by establishing a chaff cutter service and by enabling the green cut-offs utilisation in the waste collection centres.

The experience gathered within the biowaste composting activities has been compiled and evaluated within the annual reports “NÖ Kompostaktivitäten” (“Lower Austria Composting Activities”).

This way it has been the task of the Province of Lower Austria to transfer the gathered own experience on establishing the biowaste composting on municipal level. A message of high relevance is here that biowaste garden composting shall be viewed as a part of the overall biowaste management concept, together with complementary agricultural and municipal / commercial composting, and that an economic profit is achievable for the citizens.
Within the COMPASK project, the following support has been allocated by the Province of Lower Austria:

- Biowaste Conference (Organic waste composting decentralised-flexible-natural-economical from villages to cities, from waste collection logistics to compost utilisation, a model for Europa)
- Internet platform www.biowaste.at (e.g. also newsletters on biowaste garden composting in Flanders and Lower Austria)
- The Biowaste Management Concept of the Province of Lower Austria
- Annual reports “NÖ Kompostaktivitäten” (“Lower Austria Composting Activities”)
- Materials and know how on reducing the biowaste ratio in the residual waste in Lower Austria
- Informational folders for biowaste collection and garden composting for private households, e.g. "Kompost selbst gemacht" (“Self-made compost”), "Bioabfall sammeln" (“Collecting biowaste”)
- School training materials on expert training, etc.

The **main benefit for** the Provincial Government Office of Lower Austria - Department of Environmental Economics (RU3) – resulting from the COMPASK project can be summarised, as follows:

- Strengthening of the decentralised composting in Lower Austria by extending the implementation of the ecological waste management in the neighbour country Slovakia, at the example of the pilot mujnicipality Sväty Jur.
- The COMPASK project contributes to Lower Austria further advancing as a pioneer in the field of sustainable environmental protection (e.g. Klimabündnis, biowaste management, etc.).
- The COMPASK project contributes also to a prospective supporting role of the neighbour countries for Lower Austria referring to the position of Austria on a planned EU Directive „Biological Treatment of Biowaste“, respectively, to the work on the EU Soil Strategy.
- Perspectives and collaboration over the internet platform www.biowaste.at: the ongoing supervision of the www.biowaste.at platform contributes also to the popularisation of the key results of the COMPASK project in the countries of Central and Eastern Europe. The Province of Lower Austria thus counts on other parts of the neighbour countries to follow its example of a waste management model of proven ecological and economical soundness.

Union of the Viennese Public Education - ”eco counselling” Vienna - Competence Centre Greens and Garden

The Union of the Viennese Public Education - ”eco counselling” Vienna - Competence Centre Greens and Garden - participates in the project as both a project partner and a national co-financier. The ”eco counselling” Vienna - Competence Centre Greens and Garden is specialised in the multi-facetted area of public education and environmental protection. This expertise reflects the **project role** of the ”eco counselling” Vienna - Competence Centre Greens and Garden, being:

- Providing with counselling experts for biowaste garden composting
- Preparation of specific information on biowaste garden composting, in particular for adolescents and the school sector
- Development of manuals and school educational materials on biowaste garden composting and waste separation
- Selection of the schools in Vienna for implementation of the school subproject (biowaste garden composting in schools)
- Implementation of the school subproject (biowaste garden composting in schools)
- Permanent supervision of the school subproject
- Organising material and information support for the school project
- Providing support for the experience exchange Austria - Slovakia
- Support by organising the excursion and the experience exchange between the Viennese and the Slovak schools
- Support by the project presentations in Vienna and in the pilot region in Slovakia
- Providing part of the project national co-funding

The **main benefit for** the ”eco counselling” Vienna - Competence Centre Greens and Garden – resulting from the COMPASK project can be summarised, as follows:

- Gaining additional publicity as one of the most professional building institutions in Vienna and in Austria
- Gathering updated experience in awareness building processes towards waste management with adolescents, applicable also for other biowaste management projects in Austria and Slovakia
- Gathering experience of international educational specifics, in particular in the region Greater Vienna – Greater Bratislava
- Gathering new knowledge and experience in biowaste garden composting
- Gathering an update of specific educational information
- Identification and response to the educational need in the schools in the area of environmental protection and in particular, in sustainable biowaste management, and thus identification of potential future projects
- A contribution to the waste prevention policy of the City of Vienna by supporting the better waste separation in the schools by the pilot example of two Viennese schools

Municipal Union for Waste Treatment in the County of Bruck an der Leitha (GABL)

The Municipal Union for Waste Treatment in the County of Bruck an der Leitha (GABL) - participates in the project as both a project partner and a national co-financier. The Municipal Union for Waste Treatment in the County of Bruck an der Leitha (GABL) is expert for waste management on municipal and county level in its full range. **In this project, the role** of the Municipal Union for Waste Treatment in the County of Bruck an der Leitha (GABL) relates to its key competence, being:

- Providing with implementation experts on centralised and decentralised composting and on the integration of environmentally-friendly biowaste management into the municipal policy
- Compilation of available material for public information
- Collaboration at adapting the information materials for the Slovak pilot municipality
- Organisation of excursions to biowaste treatment facilities (biowaste bin collection system, private decentralised composting, centralised composting, waste collection and recycling centres)
- Support by the experience exchange on the practical aspects of decentralised composting (Austria – Slovakia)
- Support by organising the excursions to private and public compost facilities
- Support by the project presentations in Vienna, Lower Austria and in the pilot region in Slovakia
- Providing part of the project national co-funding

The **main benefit for** the Municipal Union for Waste Treatment in the County of Bruck an der Leitha (GABL) resulting from the COMPASK project is, as follows:

- An increased positive political and professional presence of the Municipal Union for Waste Treatment in the County of Bruck an der Leitha (GABL) in the region of Greater Bratislava
- Gain of prospective professional contacts with Slovak experts and municipal authorities, available for potential future projects as well
- Disposal over detailed manuals for awareness raising activities in the schools, related to a sustainable biowaste management, which can be used also for the PR work on sustainable (bio)waste management in the schools of the Bruck an der Leitha county

Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW)

The Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) participates in the project as a national co-financier.

The **main benefit** of this project for the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) can be summarised, as follows:

- A contribution to the Austrian approach towards waste prevention and thus towards a forward-looking waste management.
- Strengthening the material recovery of biowaste as a fertiliser and as a contribution for long term soil protection
- Political presence on federal level in the project region
- Practice-related knowledge of awareness building processes with a positive long-term effect in the field of environmental protection and in particular in the field of sustainable biowaste management
- Detailed training documentation, applicable at any school in Austria

INTERREG IIIA Austria – Slovakia Relevant Conclusions

The COMPASK project allows for the following conclusions related to the INTERREG IIIA Austria – Slovakia Programme:

- The supervision by the Viennese INTERREG office – MA 27 has been very supportive friendly and efficient for the entire project cycle. Especially in the project preparation phase where it has been possible to clear the chances of an project idea in a very early phase.

- The Programme structure allows for a most optimal implementation of pilot projects thanks to its flexibility and minimum administrative effort. The latter is a definitive advantage and a unique feature of the INTERREG IIIA Programme in relation to pilot and demonstration projects, especially when compared to the other EU funding programmes, which are characterised by an enormous bureaucratic effort.

- The operation of the Slovak PHARE CBC national office (hosted by the Slovak Ministry of Regional Development) has been, throughout the entire project cycle, absolutely unsatisfactory: beginning with the complete lack of pre-project information and reluctance to respond to the contact attempts of the Slovak project manager over contradictory forms and submission manuals up to the lack of reasoned rejection of the submitted project proposal for the Slovak PHARE CBC proposed project. All related information have been immediately delivered to the Austrian INTERREG IIIA office – MA 27 (emails from Kisliakova to Neuhauser dated 11.08.2003, 24.11.2003, 25.11.2004).

- Recommendations for future improvements in transnational programmes, i.e. INTERREG – INTERREG as with the EC accession of the new member countries, are:

    - more coordinated programme management between the Austrian and the Slovak commissions: coordination and correspondence of programme requirements, forms and approval criteria as well as avoidance of contradictory conditions (e.g. Chapter Project Scope and Cross Border Cooperation) would allow a more successful project application and implementation.

    - auditing of accounts: measures should be undertaken that will allow for a more efficient auditing of accounts, i.e. clear rules to be followed and necessary documentation to be provided by the project manager should be known in advance. The rules should be valid for the entire project duration.

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ANNEXES

1 Introduction

1.1 EU Legal Framework

An important legal framework for the waste management in the EU member states and the accession countries is given by the EU-Landfill Directive (1999/31/EC). It requires a significant reduction of biodegradable waste disposed at landfills within the next years, considering the landfill biogas generation (one of the highest contributors to the global warming potential from waste management) and the chemical pollutant loads of leachate, endangering the quality of ground- and drinking water. The amount of biowaste to be landfilled shall be reduced by:

- 25% (with reference to the amount generated in 1995) until 2006
- 50% until 2009
- 65% until 2016

Thus, new management options are required in order to meet as soon as possible such high ecological and economic criteria. The current possibilities and their general comparison are shortly presented in the following chapter, as well as the applicable alternatives for a sustainable biowaste management.

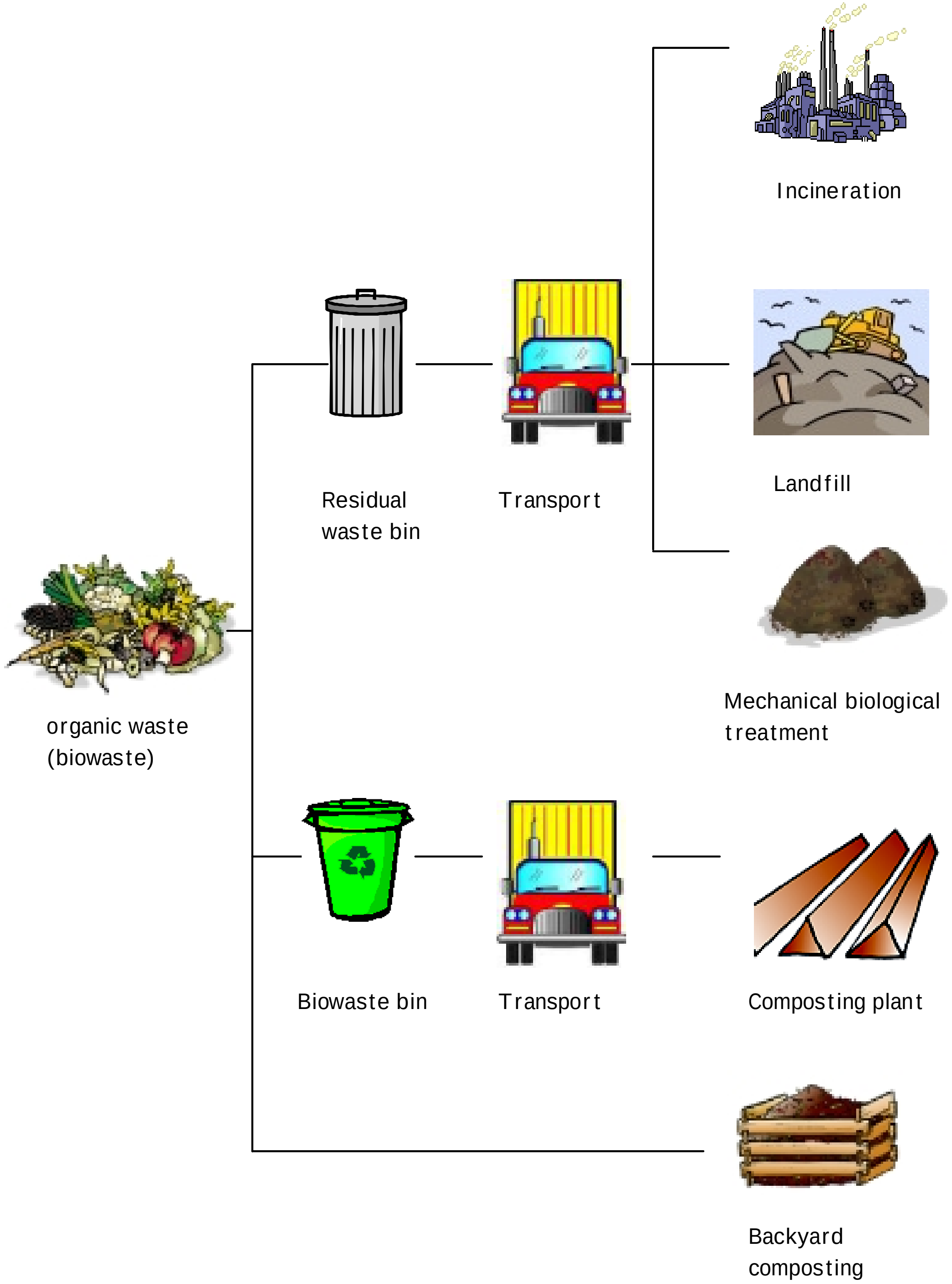
1.2 Options for Biowaste Treatment

For biowaste, three treatment options are known:

- landfilling,
- incineration,
- composting (centralised, decentralised and garden composting), and
- within a certain framework (e.g. massed kitchen biowaste from canteens, or large amounts of green cut-offs from public parks), the option of biogas generation out of biowaste can be considered. However, within the boundary conditions of the current project, this option is not of practical relevance.

The necessary infrastructure for each alternative is shown below:

Options for Biowaste Treatment and Related Necessary Infrastructure



Source: VLACO, Belgium, http://www.vlaco.be/; Cliparts by http://dgl.microsoft.com Graphics: ÖGUT

The environmental risk of landfilling towards climate, soil and water resources qualifies this disposal approach as most disadvantageous due to the organics being transformed to up to 40% methane (greenhouse gas (GHG) emissions) and due to the risk of groundwater contamination over the leachate. Also, waste collection presumes corresponding infrastructure and thus results, besides higher costs per unit of landfilled waste, in additional GHG emissions.

Incineration demonstrates very satisfactory quality in terms of gaseous emissions, but poses a long-term problem as to the disposal and the eventually problematic after-care of the solid output (incineration residuals still amount to 30% of the initial waste mass), especially as much as fly ash is concerned. Also, thermal treatment of domestic biowaste would result in a negative energy balance for the incineration plant (a higher energy input needed than yielded, due to the high water content of biowaste). Waste incineration plants equipped with modern filter facilities and catalysts prove very high costs per ton. Out of financial reasons thus incineration should be cut down onto those waste fractions where recycling either demonstrates no possibility or offers no profit. As in the case of landfilling, the additional aspects of waste collection and transportation remain here the same.

In contrast, separate bio-waste composting allows for a closed-loop recycling and for shifting towards a sustainable material management. Centralised composting, however, presumes significant investments for the composting plants and for biowaste collection and transportation, in particular if considering the seasonal peaks, and thus the higher frequency of collection intervals, of garden waste. Last but not least, odour emissions from the biowaste collection bins may contribute to developing a rather negative attitude towards biowaste.

An option of both environmental and economical soundness is offered by the biowaste garden composting. Its main advantages are presented in the table below, as counterparts to the requirements of a sustainable biowaste management:

Correspondence between the Requirements of Sustainable Waste Management and Biowaste Garden Composting	
Sustainable Waste Management	**Biowaste Garden Composting**
as little biowaste as possible into the landfill or into the incineration	minimal to no organic fraction in the landfill; minimisation of GHG emissions and of organic load in the leachate
as low transport demand as possible (infrastructure, fuel)	no transportation
as low demand of non-renewable materials as possible (plastics, metals, etc.)	renewable raw materials for wooden compost boxes; added value (Wertschöpfung) remains completely in the region, mostly by the households
high acceptance by the citizens	no odour emissions; lowest costs; output can be utilised instead of (expensive) artificial fertilisers
as cheap as possible on macro- and micro - economic level	identical place of biowaste origin and of waste (product, as compost) utilisation; no operation costs for the municipalities; no investments in infrastructure necessary costs only for information campaigns and training of composting experts
high quality of the recycling product	high quality of the natural fertiliser (compost); awareness for bio-material cycles increases the environmental awareness also for other subjects

In summary, the main advantages of the biowaste garden composting are:

- scarce landfill volume is saved,
- a contribution to GHG emission reduction is ensured (landfill, waste transportation),

- risk potential for groundwater (leachate) is decreased,
- waste recycling promotion is supported, and
- investments for additional transportation infrastructure and central composting facilities are saved; waste treatment and disposal costs are saved. The latter is a notable advantage for the economic background of the accession countries.

In the City of Vienna, thanks to numerous action programmes on the promotion of garden composting, a significant success has been achieved in the last 15 years as to raising the ratio of garden composting in the suburb areas. In a variety of districts in Lower Austria the participation of households that compost their biowaste on their own amounts to more than 80%. The total amount of garden composted biowaste in Lower Austria is about 208.000 t/year. If this amount is to be collected by separate bio-bins, the costs would be about 18 Mio. Euro/year (charged on the citizen or public entities). If this amount of biowaste is to be incinerated (costs about 75 - 150 Euro/t), the disposal costs would be about 24 Mio. Euro. Garden composting becomes thus one of the key economic and ecological relevance in the regional waste management, especially for regions of weakened economical background, where garden composting can contribute to a major part of the added value remaining in the region. The need of innovative and affordable alternatives for biowaste management, as the garden composting is, in particular in the accession countries has been recognised as a waste management priority.

2 Spatial Range of the Project

The spatial focus of the project is set, in Austria, on the region of Vienna and Lower Austria (pilot region: the Bruck an der Leitha county), where experience in centralised and garden composting as well as in the accompanying activities (public relations, organisation, counselling) has been gained for decades. In Slovakia, the pilot municipality (Sväty Jur) is located 13 km north-west of the capital Bratislava, in the administrative district of Pezinok. The pilot region of the COMPASK project is thus defined as Vienna – Lower Austria (Bruck an der Leitha) – Bratislava (municipality of Sväty Jur in District Pezinok):

Graphics: ÖGUT

3 Project Scope and Cross Border Cooperation

The current pilot project on garden composting concentrates on its introduction in the local waste management of Slovakia on the example of the municipality of Sväty Jur. However, the project scope is defined by the extent of the cross border cooperation. **The COMPASK project has been based on the concept of a twinning PHARE CBC project executed in parallel. Since the PHARE CBC proposal has been rejected three consecutive times (in December 2002, in August 2003 and in July 2004), the planned scope of the activities in the Slovak pilot municipality has been significantly reduced, respectively, given another direction and has relied mainly on the voluntary cooperation by the Slovak municipality and NGOs. The goal has however been kept to realise as much of the initial project idea as circumstances would allow for.**

The reasons for the rejection of the PHARE proposal have been, as follows:

- December 2002: PHARE Slovakia does not recognise St. Poelten as a project partner for the Slovak applicant, despite the fact that INTERREG Austria does.

- August 2003: in the financial plan, the Slovak applicant has declared the existing contract with the OeGUT, which has been qualified as “eligibility violation”: only his own resources should have been listed.

- July 2004: “the application has not achieved the minimum score required for relevance to the objectives and priorities of the Call for Proposals”, without any other comment.

Documentation on both rejections is available at the ÖGUT (project manager) upon request. The INTERREG office of Vienna has been informed about both cases.

The hereby evoked reduction and alteration of the project scope have resulted in the following project scope:

- co-ordinated technology transfer and experience exchange with a view on the differing economic and socio-political background and environmental practice,
- instead of thorough PR work, information campaigns and introduction of garden biowaste composting on municipal level, the activities have addressed only key multiplicators, such as the local school, the kindergartens and the local NGOs.
- practical promotion of the biowaste garden composting at local scale (municipality) integrating the key multiplicators,
- ensuring of the prerequisites needed for the successful integration of the biowaste garden composting in the Slovak pilot municipality Sväty Jur,
- an opinion poll in Sväty Jur on the acceptance of the biowaste garden composting, to serve the development of later PR campaigns in Sväty Jur,
- additionally, initiation of two new long-term processes: initiation of participative processes and awareness raising, both in the field of (bio)waste management. These include the initiation of a voluntary Steering Group on garden biowaste composting and its cooperation with the municipality, and the integration of the garden biowaste composting

in the kindergarten and school education, with a following cooperation between a Viennese school and the school in Sväty Jur.

4 Project Goals

4.1 Main Goals

The overall goals of the project are:

- to demonstrate the practical integration of cost-effectiveness into the environmental protection in an accession country at the example of biowaste garden composting, and
- to create the needed prerequisites for introducing the garden composting on municipal level.

4.2 Specific Goals

The specific goals have been adjusted to the fact that the PHARE project part has not been granted funding, i.e. large-scale PR work and public participation have not been possible.

The specific goals defined thus include:

- promotion of the garden composting in the municipality
- establishment of the garden biowaste composting on multiplicator locations, e.g. school, kindergartens, local NGO;
- enabling the process of awareness raising by integration of the garden composting in the kindergarten and school education;
- enabling a school cooperation between Sväty Jur and Vienna in the field of biowaste garden composting;
- enabling the begin of participative processes in the municipality in the field of biowaste garden composting by a direct constructive dialog between voluntary representatives of the municipality with the municipal administration.

5 Methodology

The methodology applied in this project corresponds to the structural requirements of a pilot project, i.e. the project consists of the following three phases:

Theoretical preparation

- data collection on the current state of biowaste management in the pilot area and the surrounding region (Vienna, Lower Austria, Bruck an der Leitha, Sväty Jur, District Pezinok, Slovakia) as project framework,
- opinion survey on biowaste garden composting in the municipality of Sväty Jur,
- data analysis and revision of biowaste management goals and treatment approach where applicable (i.e. in the Slovak pilot municipality).

Implementation

- know how transfer from Austria to the pilot municipality in Slovakia: seminars and visits to biowaste treatment facilities in Lower Austria,
- promotion, establishment and integration of the biowaste garden composting in the pilot municipality on multiplicator locations: promotion at the municipal feast, promotion in the kindergartens in Sväty Jur, initiation of a school cooperation with Vienna, integration in the school education,
- preparation of an Implementation Plan for full introduction of garden biowaste composting on municipal level,
- initiation of participative processes in the municipality by establishment and coaching of a municipal steering group on biowaste garden composting, training of the members in PR work and planning with regard to garden biowaste composting (the "support to self-help" approach) and initiation of a constructive dialog with the municipal administration.

Results and Conclusions

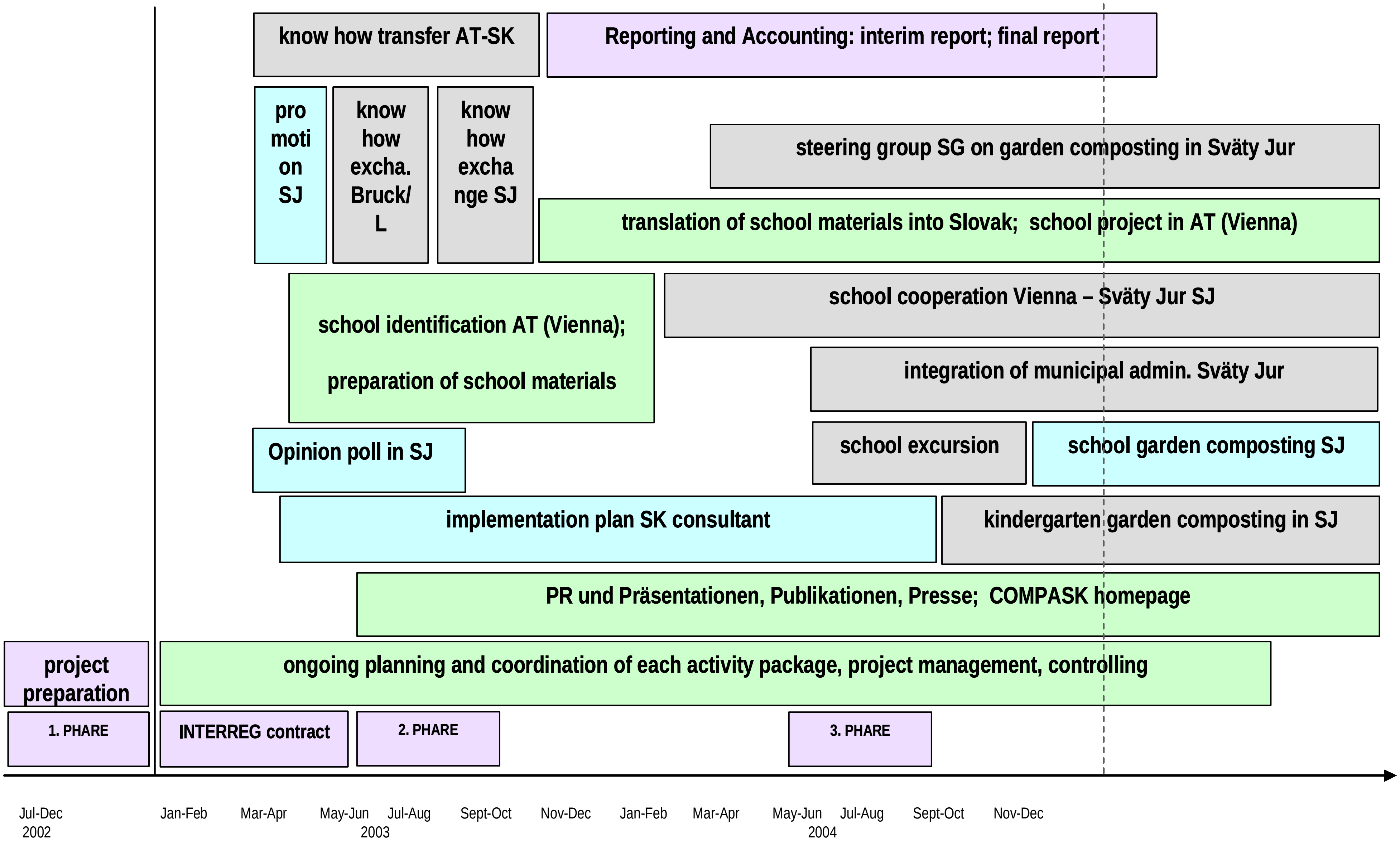
The key results and the correspondent conclusions resulting from this project are presented.

In the following two Chapters 6 and 7, an overview is offered over the state of biowaste management in Vienna, Lower Austria, the Slovak Republic, District Pezinok and the pilot municipality of Sväty Jur. It serves the comprehension of the framework in which the project is developed, of the specific goals of the biowaste management in each region and of the resulting problems in particular in Sväty Jur and their possible solution. Chapter 8 summarises the project activities. Chapter 9 offers the project results. Chapter 10 presents the conclusions of the project. Chapter 11 gives an overview over the future activities in the pilot Slovak municipality after the project conclusion.

Below, an overview over the project activities is presented. A full list of them is attached in the Appendix. The following overview illustrates also:

- the significant administrative effort within pilot projects in the field of waste management,
- the good balance between cross border and national activities, and
- the long-term effect of the project.

Overview Project COMPASK



Legend: - common activities - activity only by SK - activity only by AT- administration

6 Biowaste Management in Austria

In the current project, biowaste management in Austria is presented by the examples of an urban centre (Vienna) surrounded by rural suburbs and the Province of Lower Austria characterised by prevailing rural structure. Both prove suitable for a comparison with the pilot region in Greater Bratislava - Sväty Jur, with Vienna being an example of the bio-bin system coexisting with garden composting (in its outer districts), and the Province of Lower Austria corresponding to the local conditions in the greater area Vienna – Bratislava: with regard to its location related to Bratislava, Sväty Jur is an analogy to a Viennese suburb, and in the same time, the entire region of the District of Pezinok (where Sväty Jur is located) shows a structure similar to the one of Lower Austria. Thus, the biowaste management of Vienna and Lower Austria are presented as alternative schemes to follow in Sväty Jur.

6.1 Biowaste Management in Austria on the Example of Vienna

6.1.1 Current State of the Biowaste Management in Vienna

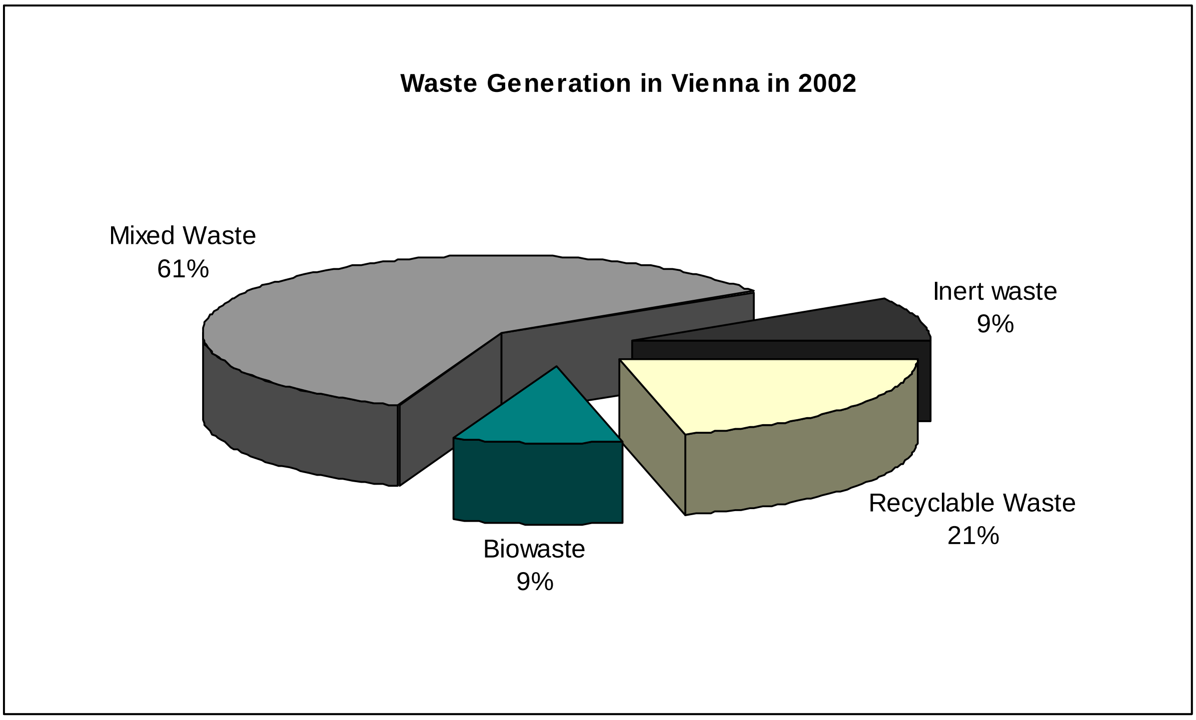
6.1.1.1 Biowaste Generation

In Vienna, a total of **90.423 t compostable material was generated in 2002** (73.191 t over the bio-bin collection, 9.515 t over collection islands and in total, 7.717 t over the bulky waste collection, street cleaning, industrial and other deliveries):

Waste generation in Vienna in 2002 (MA 48 collection and industrial deliveries)						
MA 48 totals (primary generation) 2002 collection system / origin	Waste Types					SUM 2002 [t]
	Mixed Waste [t]	Inert Waste [t]	Recyclable Waste [t]	**Biowaste [t]**	Problem. Waste & Waste Kitchen Oil [t]	
System collection MA 48	508.636		156.814	**73.191**		738.641
Waste islands MA 48	27.803	56.607	38.195	**9.515**	2.573	134.694
Problem. waste collection MA 48					264	264
Bulky waste collection MA 48	2.975	22	3.672	**222**	207	7.097
Trough collection MA 48	11.353		4.103	**1.492**		16.949
Street cleaning MA 48	34.925	12.291	142	**396**		47.755
Other collection MA 48	6.227	262	2.685	**691**	25	9.890
SUM collection MA 48	**591.920**	**69.183**	**205.612**	**85.506**		**955.289**
Industrial deliveries MA 48	3.388	19.816	4.556	**4.917**		32.894
TOTAL MA 48	**595.307**	**88.999**	**210.168**	**90.423**		**988.184**

Source: MA 48 Leistungsbericht 2001 2002 http://www.wien.gv.at/ma48/rtf/lbawteil1.rtf, pp. 11

The biowaste share in Vienna is lower than in Lower Austria (cr. Chapter 7.2), amounting to 9% of the total waste generated (problematic waste excluded):



Source: MA 48 Leistungsbericht 2001 2002 http://www.wien.gv.at/ma48/rtf/lbawteil1.rtf, pp. 11

Graphics: ÖGUT

In 2000, the biowaste collection was intensified in the 21st und 22nd Viennese Municipality Districts. During 2001-2002, it was successfully extended onto the other outer districts. In the progress of this reorientation, public bio-bins have been removed. Each garden owner has been offered an own bio-bin at his disposal. In parallel, emptying sequence has been reduced from twice down to once a week, so to ensure a greater filling grade of the containers.

A number of experiments have detected a quite low amount collected (and thus too high collection costs) in the inner districts, with the material proving also a negative impact on the compost quality.

Source: MA 48 Leistungsbericht 2001 2002 http://www.wien.gv.at/ma48/pdf/lbawteil01.pdf (pp. 32-33)

Utilisation of biowaste material as a resource for compost production demonstrates vividly the waste-and-resource recycling cycle. Approximately 30% of the initially collected organic material remains as high-quality compost at the end of the production cycle. The product is distributed, free of charge, among the Viennese agricultural companies (in 2002: 20.690 t being ca. 60% of the total compost amount), the forestry (ca. 30%) and private buyers and small garden unions (in total ca.10%).

Source: MA 48 Leistungsbericht 2001 2002 http://www.wien.gv.at/ma48/pdf/lbawteil03.pdf

6.1.1.2 Compost Pre-processing

Separately collected biowaste, together with structural material from the industrial deliveries (mainly tree and bush cut-offs), are prepared within the waste treatment facility of Vienna (WTF) for composting to follow.
The input is sieved, impurities are separated, and finally it is homogenised together with the hackled structural material for 10 min. in a mixing drum. The material pre-processed this way is transported to the Lobau composting plant.

In 2002, the pre-processing turnover of the facility amounted to 90.423 t biowaste, of which 3.086 t impurities separated, thus 87.867 t pre-processed compost material were delivered in the Lobau compost plant.
Source: MA 48 Leistungsbericht 2001 2002 http://www.wien.gv.at/ma48/pdf/lbawteil02.pdf (pp. 41)

6.1.1.3 Composting Plants

The processing capacity of the Lobau and Schafflerhof composting plants is 120.000 t biogenous material.
At the Lobau composting plant the intensive (main) rotting process of 1-3 months takes place. Water contents, nitrate, nitrite, oxygen saturation, pH value, conductivity, heavy metals and vegetal compatibility are regularly tested. Quality control is performed by an external laboratory.
After the post-rotting process, the compost is transported to the Schafflerhof composting plant where it undergoes sieving and is stored during placement.
Source: MA 48 Leistungsbericht 2001 2002 http://www.wien.gv.at/ma48/pdf/lbawteil02.pdf (pp. 47-48)

6.1.1.4 Waste Fees

Fees are calculated depending on the volume and the emptying frequency of the waste bins. The fee charged for the smallest unit being the 110/120 l bin (residual waste bin) and a once-a-week emptying (standard minimum set by the Viennese Waste Management Act) has been 3,16 Euro since May 2002. Thus the minimum annual fee amounts to 164,32 Euro per household.

Availability of containers for recyclable waste, bio-bins and additional service by the MA 48 (collection of problematic waste, supervision of the waste islands and the „Waste Phone“) are all covered by the fee for residual waste cited above, i.e. no additional fees are charged, which contributes to an improved separate waste collection by the citizens. An additional financial support is given by the Altstoff Recycling Austria AG (ARA) by cost sharing for the collection of the licensed packaging waste within the recyclable waste.
Quelle: MA 48 Leistungsbericht 2001 2002 http://www.wien.gv.at/ma48/pdf/lbawteil01.pdf pp. 78

6.1.2 Biowaste Management Goals in Vienna

Based on the Regulation with hygiene provisions of the European Parliament and the Council (Regulation (EC) 1774/2002 from 03.10.2002), the City of Vienna has developed a new concept on its municipal biowaste management. According to this, organic waste originating from the inner districts is foreseen to be collected in „kitchen bins“ whose contents (mainly food and kitchen waste) will be then utilised in the biogas plant of EbS Simmering (capacity of ca. 30.000 t/a). In the outer districts, the current bio-bins will be replaced by garden bins for designated collection of only garden waste. The latter will be forwarded to the Lobau composting plant for compost production and utilisation as fertiliser.

A simultaneous availability of a kitchen and a garden bin is not foreseen, based on the consideration that in areas with high quotes of kitchen and food waste (inner districts, urban areas of high population and service density such as lunchrooms, licensed inn-houses) little garden waste originates, and in turn, in areas of a dominant one-family-house structure (outer districts), the amount of kitchen and food waste is small compared to garden waste.

Source:
„EU Hygieneverordnung und biogene Abfälle – das neue Bioabfallwirtschaftskonzept der Stadt Wien“, DI W. Rogalski, in *Waste Magazin,* 2/2003, pp. 5-8

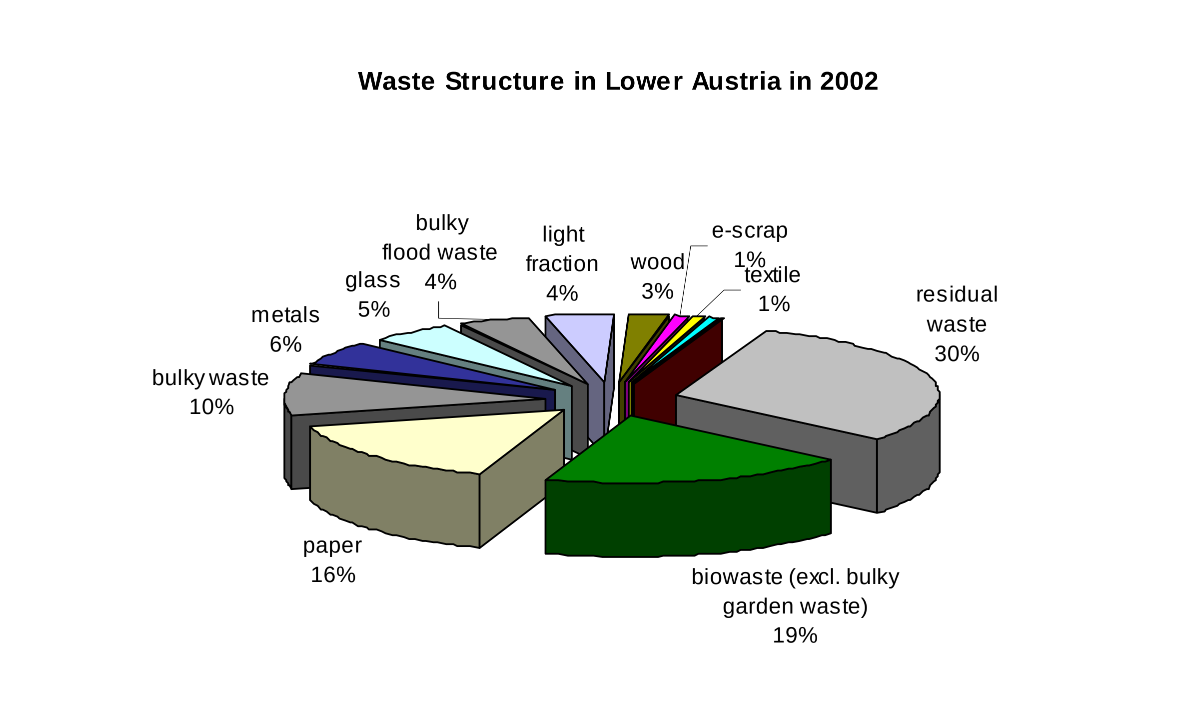
6.2 Garden Composting in Austria on the example of the Province of Lower Austria

Source for the entire Chapter: http://www.noel.gv.at/service/RU/RU3/Abfallwirtschaftsbericht.htm

6.2.1 Current State of the Biowaste Management in Lower Austria

6.2.1.1 Biowaste Generation

In 2002, collected biowaste (kitchen waste and non-bulky garden waste) in the Province of Lower Austria amounted to 124.676 t (83,6 kg/cap*a), being 19% of total waste (656.314 t) and thus the second largest fraction after residual waste:

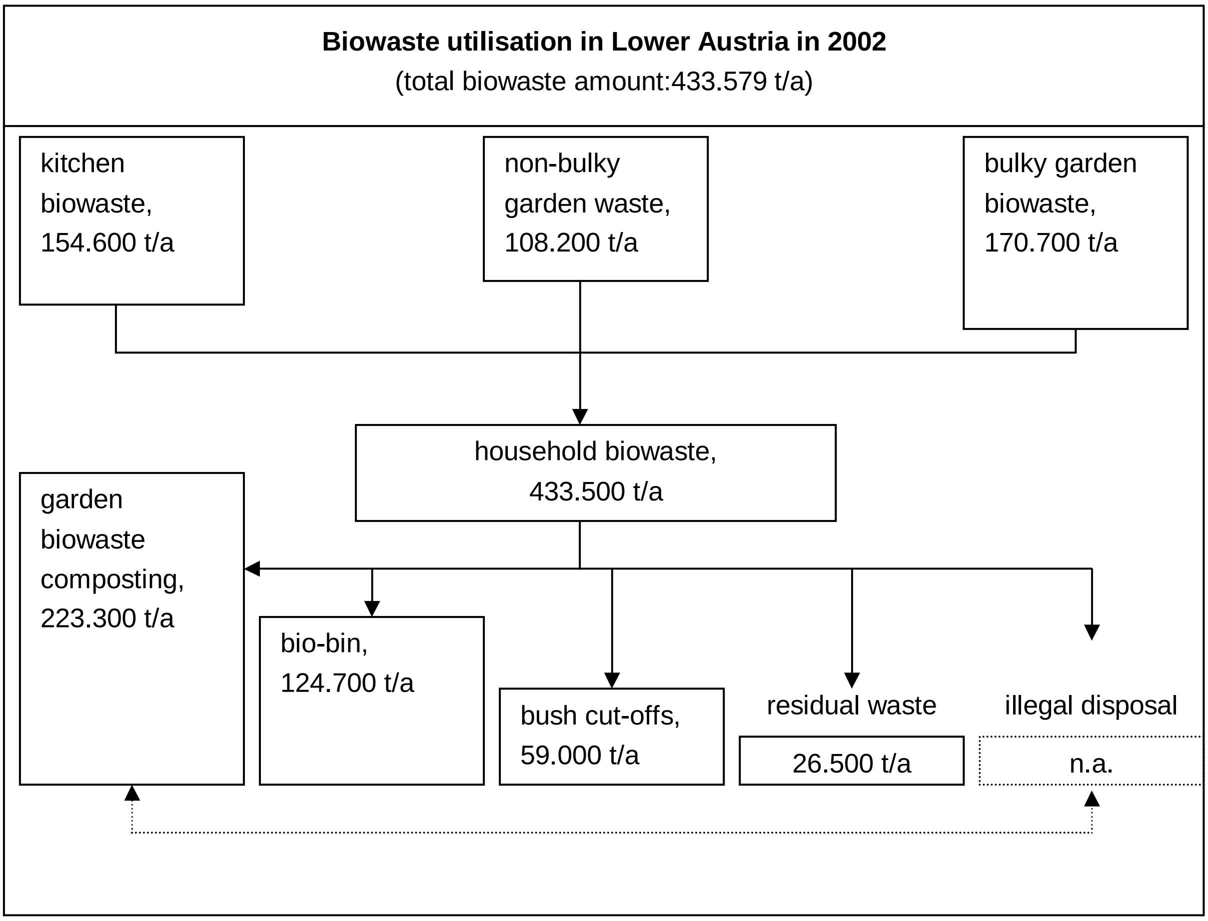


Source: http://www.noel.gv.at/service/RU/RU3/Abfallwirtschaftsbericht.htm Graphics : ÖGUT

Theoretically, kitchen biowaste should amount to 154.600 t/a (100 kg/cap*a). Calculated non-bulky garden waste (70 kg/cap*a) amounts to 108.200 t/a, and calculated bulky garden waste – to 170.700 t/a (with 110,4 kg/cap*a). Thus, the theoretical biowaste generation in Lower Austria is estimated to ca. 433.500 t/a.

6.2.1.2 Biowaste Utilisation

- (theoretically) ca. 223.333 t/a are utilised over garden composting
- 124.676 t/a are composted over the bio-bin collection
- 58.970 t/a are collected over the bulky garden waste
- 26.500 t/a are mistakenly disposed of in residual waste
- an unknown amount is illegally disposed of at uncontrolled sites:



Source: http://www.noel.gv.at/service/RU/RU3/Abfallwirtschaftsbericht.htm Graphics : ÖGUT

The balance of biowaste generation (433.500 t/a) and utilisation (433.479 t/a) is given in the table below (generation and utilisation categories are not identical):

Biowaste Generation and Utilisation Balance of Lower Austria in 2002			
Biowaste Generation, t/a		Biowaste Utilisation, t/a	
Kitchen biowaste	154.600	Garden composting	223.333
Non-bulky garden biowaste	108.200	Bio-bin collection	124.676
Bulky garden biowaste	170.700	Bulky garden biowaste	58.970
		In residual waste	26.500
Total	**433.500**		**433.479**

6.2.1.3 Decentralised Biowaste Composting Plants in Lower Austria

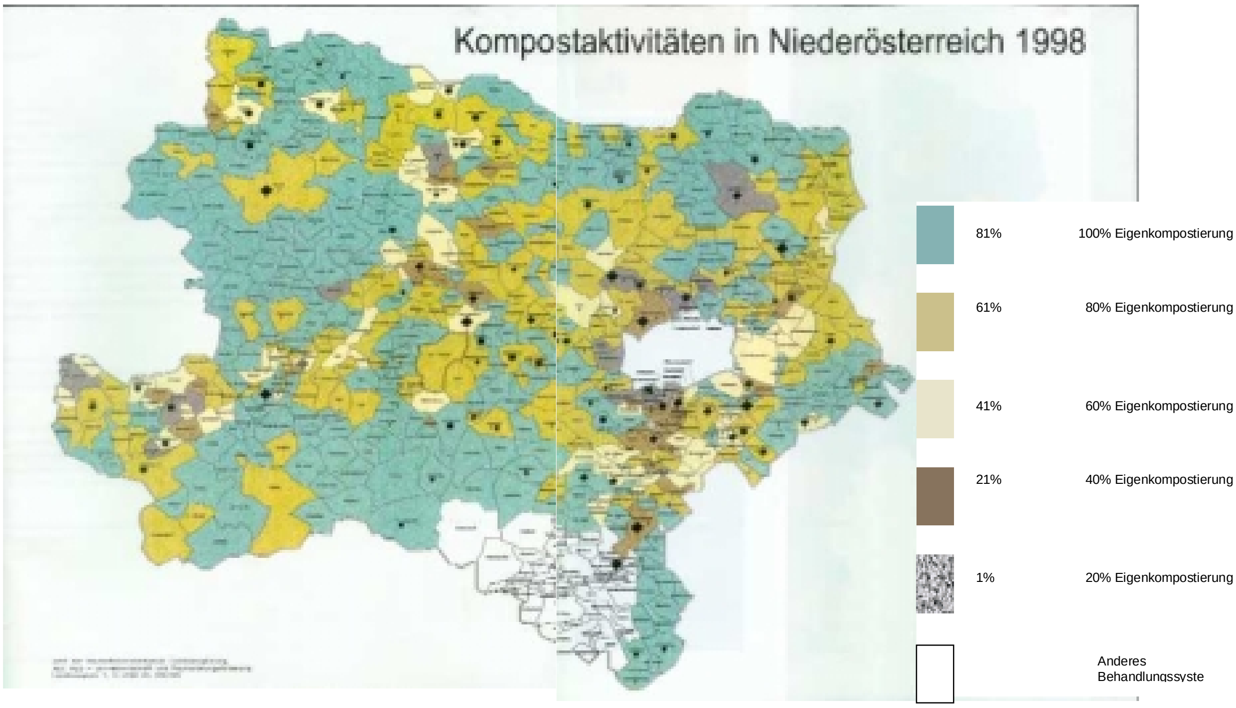
In 2002, 81 composting plants were in operation in Lower Austria, processing 172.548 t biowaste (green cut-offs included) into compost. This corresponds to a load level of 68% of the total annual plant capacity of 255.420 t.
50 plants of these 81 composting plants are small decentralised ones. 20 are „smallest plants“ with a capacity of 500 t/a. 28 plants prove a capacity 500 - 2.000 t/a. 18 plants can process up to 5.000 t/a. 15 plants have a capacity larger than 5.000 t/a.
43 composting plants are integrated within agricultural companies. Further plants are owned and maintained by 15 municipalities, 16 by industrial companies, 5 by the Niederösterreichische Umweltschutzanstalt, 1 by a waste union and 1 by an association.

6.2.1.4 Biowaste Garden Composting

The key biowaste treatment in Lower Austria is represented by garden composting: 54% (339.940 households) of all households in the province compost their biowaste in the own gardens. The theoretical potential for garden composting in 2002 amounted thus to ca. 146.025 t (biowaste fractions in the residual waste not considered) corresponding to an average of 94 kg biowaste / cap*a for 2002.
With further ca. 77.307 t bulky green cut-offs corresponding to a theoretical average of 50 kg biowaste / cap*a, in 2002 the total amount of garden-composted biowaste was ca. 223.333 t.

6.2.2 Goals of the Biowaste Management in Lower Austria: Priority Course towards Decentralised Composting

- Top priority: as much as possible garden composting
- Biowaste collection only when no garden composting possible
- As much as possible agricultural composting
- As many as possible small decentralised composting plants
- As fewer as necessary regional composting plants



Quelle: NÖ Kompostaktivitäten – Ergänzung zum NÖ ABW '98, Amt der NÖ Landesregierung – Abt. RU3, 1998/99

Source: Addition to the Waste Management Report of Lower Austria, 1998/1999

6.2.3 Biowaste Management Projects in Lower Austria

6.2.3.1 Composting Activities in Lower Austria: Biowaste as Quality Compost

Within the framework of the annual Garden Fair in Tulln 22. - 26. August 2002, the Province of Lower Austria, together with the waste counsellors of the waste unions and the ARGE Kompost & Biogas, gave a live presentation on garden composting. Beginning with biowaste collection in the kitchen and over the bio-bin over professionally performed garden composting up to application of the ripe compost in the garden, the presentation offered visual materials and practical guidance. Every visitor was given a portion of compost free of charge.

In parallel, measures towards further reduction of the biowaste fraction in residual waste have been undertaken, among else such as information folders, additions in the Construction Regulation of Lower Austria, related data collection and assessment, optimisation of the garden composting and the bio-bin collection.

6.2.3.2 Worm Composting System for Schools in Lower Austria

This project in the field of environmental pedagogy aims at a practical approach towards introducing students at 56 schools into biowaste composting as an example for waste prevention and closed-cycle resource management. This way, the environmental awareness among the students, parents and teachers could be increased.

6.2.4 Biowaste Fees in Lower Austria on the Example of the Bruck an der Leitha District

On the contrary to Vienna where biowaste collection and disposal costs are integrated in the residual waste fee, biowaste costs in Lower Austria are covered by an own biowaste fee. The basis for calculating the household biowaste fees is given, e.g. in the project partner Bruck an der Leitha District, by the biowaste container volume and the transportation frequency. The latter can be changed upon request by the citizen and thus, fee amount can be reduced or increased.

In the entire Bruck an der Leitha District, 38.694 inhabitants live. Of the households, 87,8% live in own one-family houses (corresponds to 19.028 private households and small businesses). 76% of the households have opted for garden composting, the rest of biowaste is collected by the bio-bin system.

<u>Annual biowaste costs for households:</u>

biowaste containers:	
120 liter, 40 disposals:	94,60 €
240 liter, 40 disposals:	189,20€
biowaste bag (paper)	
110 liter:	1,20 €
garden composting	0,- Euro

<u>Annual biowaste costs for the waste union (GABL):</u>

biowaste composting per ton:	54,50 €
transport costs (per 1 disposal):	
120-liter:	1,74 - 2,18 €
240-liter:	2,18 - 2,62 €
material costs (for container):	
120-liter:	16,-€
240-liter:	23,-€

Source: workshop presentation of Christian Mynha, GABL – Bruck /Leitha, 2003

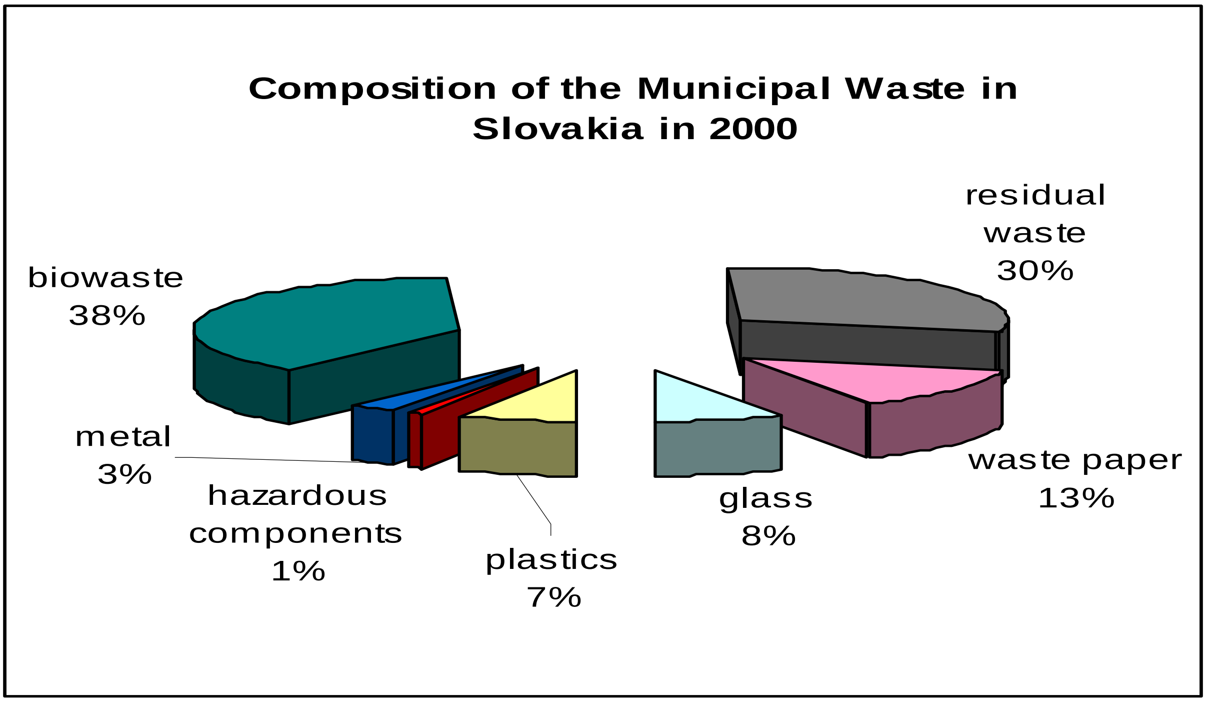
7 Framework for Biowaste Garden Composting in Slovakia

In the Slovak Republic, biowaste currently presents a problem not yet satisfactorily solved. The new waste management legislation and the new Waste Management Plan of the Slovak Republic require, in compliance with the EU Landfill Directive, a reduction of biodegradable waste disposed of at landfills. Composting of biodegradable waste appears a crucial option for fulfilling the reduction goal if considering that 62% of municipal solid waste is landfilled. The composting ratio in Slovakia differs from place to place and is higher for rural areas compared to cities. In 2000, the recycling ratio was 9% of the total municipal solid waste for the Slovak Republic and 2% for the city of Bratislava. Centralised composting has been provided in the past and is currently planned to improve and extend. Garden composting has not been encouraged in Slovakia, and no evidence of current status has been reported.
Source: pers. comm. Danka Thalmeinerova, AINOVA, Sväty Jur

7.1 Waste and Biowaste Management in Slovakia

Source for the entire chapter unless otherwise indicated:
Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

In Slovakia, the largest fraction in municipal waste is presented by biowaste, as shown in the figure below:



Source: Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004
Graphics: ÖGUT

According to the forecast for 2005, the total waste amount generated will amount to 1.800.000 t/a, with the fraction of compostable biowaste being 800.000 t/a (an increase up to 44% of the waste annually generated, related to 2000). This corresponds to investments needed of 250 Euro / a * t total waste, i.e. 450 Mio. Euro for the period 2001 – 2007. Among the goals of the Slovak Waste Management, the treatment to achieve includes 35%

recycling (wastewater sludge included), 15% waste Incineration, and 50% landfilling. The specific goals in the biowaste management until 2005 (according to the requirements of the Landfill Directive 99/31/EC) foresee at least 35% of the biowaste from the municipal waste to undergo composting, and 30% reduction of the biogenous fraction in landfilled waste related to 2000. If met, this goal will result in an investment reduction of ca. 67,5 Mio. Euro.
Source: Umweltpolitiken, -strategien und –programme der Beitrittsländer in Mittel- und Osteuropa (der Länder Tschechien, Slowakei, Ungarn, Slowenien, Polen), ÖGUT, 2002

Calculated as mass units, the situation of the waste treatment in the Slovak Republic can be summarised, as in the table below:

Municipal Waste Treatment in the Slovak Republic				
Treatment	**2000**		**Goals for 2005**	
Recycling	7 %	ca. 130.000 t	35 %	ca. 673.000 t
Incineration	12 %	ca. 200.000 t	15 %	ca. 289.000 t
Landfilling	62 %	ca. 1.100.000 t	50 %	ca. 962.000 t

Sources:
Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004;
Umweltpolitiken, -strategien und –programme der Beitrittsländer in Mittel- und Osteuropa (der Länder Tschechien, Slowakei, Ungarn, Slowenien, Polen), ÖGUT, 2002

Data from 2000 show that 12% of the biowaste generated was incinerated, the rest was landfilled. In 2005, the share of biowaste incineration should have increased to 17%. However, the national waste management policy envisages the enforcement of centralised biowaste composting in parallel.

7.2 Legal Framework of the Waste and Biowaste Management in Slovakia

According to the Slovak legal instruments, household waste treatment and adequate disposal are a responsibility of the municipalities, as well as providing with separate collection systems. Each municipality has the right to select the separate collection system to be implemented, and the methods for waste treatment and disposal, however they shall be in compliance with the obligations stipulated in the national Waste Act, its daughter regulations and the approved Waste Management Programme. Each municipality issues an own "Generally binding regulation for municipal waste handling" where all conditions and obligations are described in more details (Annex of the Implementation Plan). ´These regulations are the documents to be followed by the citizens.

In the framework of the Slovak Waste Management Programme, as well as the Waste Management Programme of the pilot district (Pezinok) and the Waste Management Programme of the municipality of Svätý Jur, the goals for 2005 are established, and all waste producers are obliged to consider and apply practical measures to reach them. Such goals are established also for reduction of biodegradable fractions in the municipal waste landfilled, according to the EU Landfill Directive transposed in the Slovak legislation.

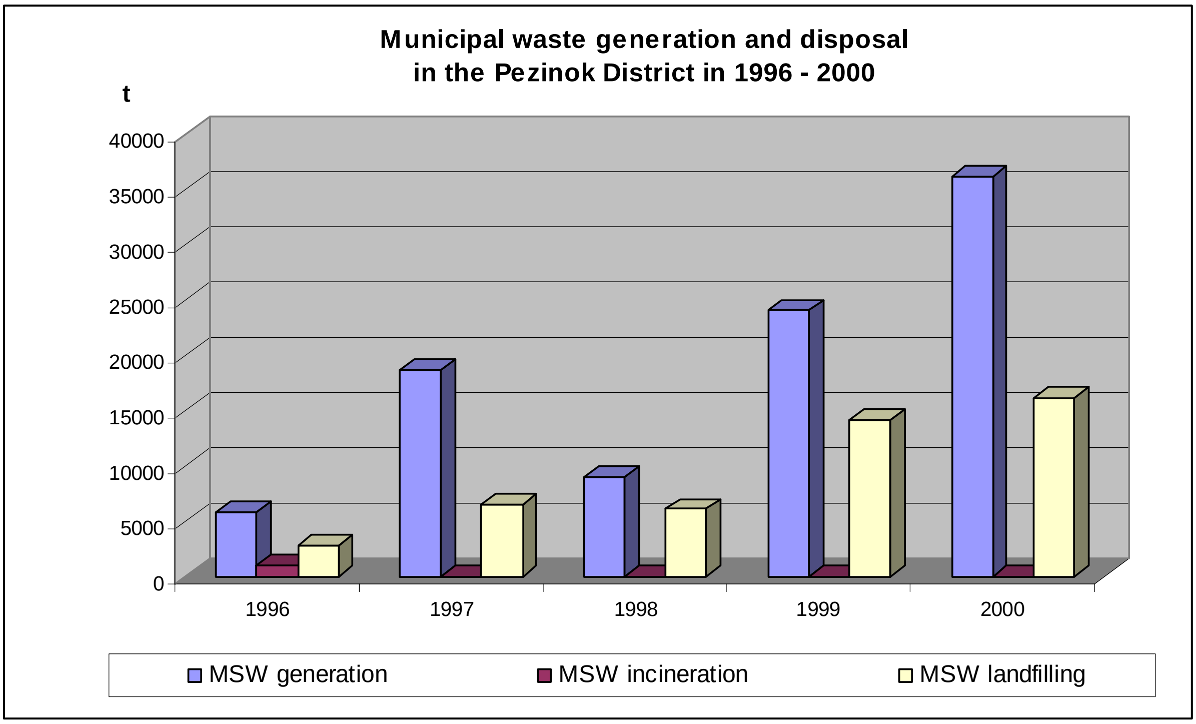
Current legislation regulated waste management in Slovakia is represented by following legal instruments:

Order of Government of the SR No. 22/2003 Col. on binding limits for waste packaging recovery and recycling referring to the total weight of packaging waste
Order of MoE SR No.25/2003 Col. on details of end of-life vehicles processing
Order of MoE SR No. 5/2003 Col. on Execution of some Provisions of Act on Packaging
Act of the National Council of SR No. 529/2002 Col. on Packaging and Amendment of Some Acts
Act of the National Council of SR No. 223/2001 Col. on Waste and on a Change of and Amendment to Some Acts;
Order of MoE SR No. 283/2001 on the Execution of Some Provisions of the Waste Act
Order of MoE SR No. 284/2001 on Waste Catalogue;
Order of MoE SR No. 234/2001 on Waste Classification according to Green, Amber and Red Lists of Wastes and on Standard Documents for Waste Transport;
Order of MoE SR No. 273/2001 on Authorisation, Providing the Expertise in Waste Management, the Appointment of Persons Authorised to Issue the Expertise and Examinations of Professional Skills of those Persons;
Act of National Council of SR No 327/1996 Col. on Charges for Waste Disposal;
Guideline of MoE SR No. 8/1996-2.3., on the List of Sludge Deposits with Respect to Charges Stipulated by the Act of National Council of SR No 327/1996 Col. on Charges for Waste Disposal;
Communication of Ministry of Foreign Affairs No. 60/1995 Col. on Acceding of Slovak Republic in Basle Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
Act of the National Council of SR No. 529/2002 Col. on Packaging and Amendment of Some Acts

At local level, the municipality of Svätý Jur has issued a Generally Binding Regulation (translated in English in the Annex of the Implementation Plan).

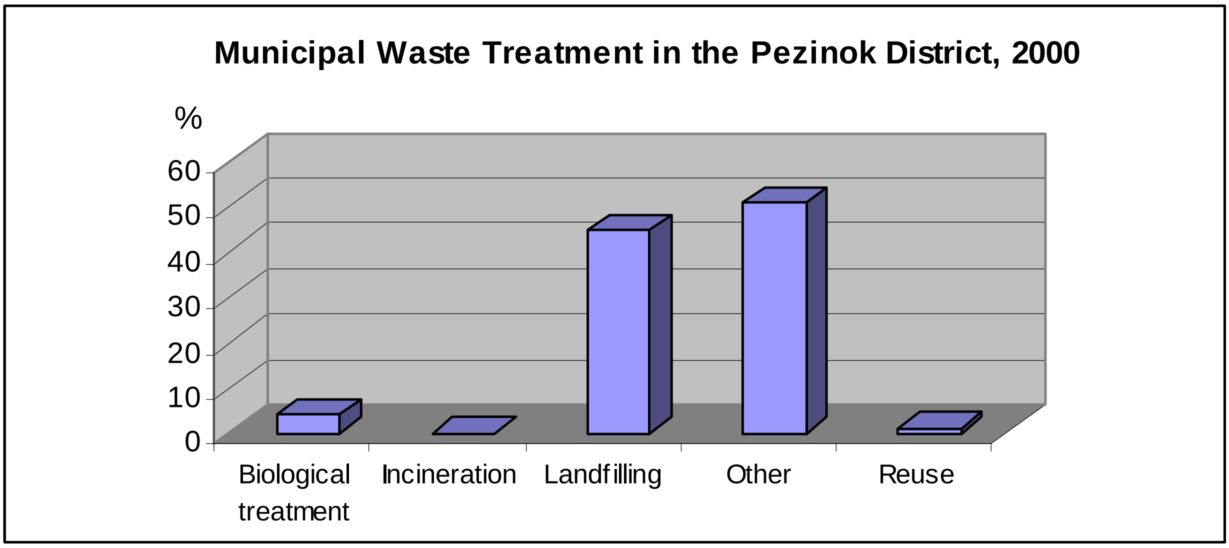
7.3 Waste and Biowaste Management in District Pezinok

In 2000, a total of 36.000 t municipal waste were generated in the Pezinok District (of which 114 kg biowaste /cap*a), following a generally increasing trend since 1996:



Source: Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

Waste management data for the Pezinok District are not complete in terms of waste treatment specification. In 2000, half of the total municipal waste was disposed of by landfilling, including ca. 6.000 t of biowaste (37% of the landfilled MSW). Information on treatment methods for the rest is not available, although the large share of “other treatment methods” in the figure below concerns mainly wastewater sludge being digested within the wastewater plants, which in Slovakia belongs to sector Water Resources and not Waste Management:

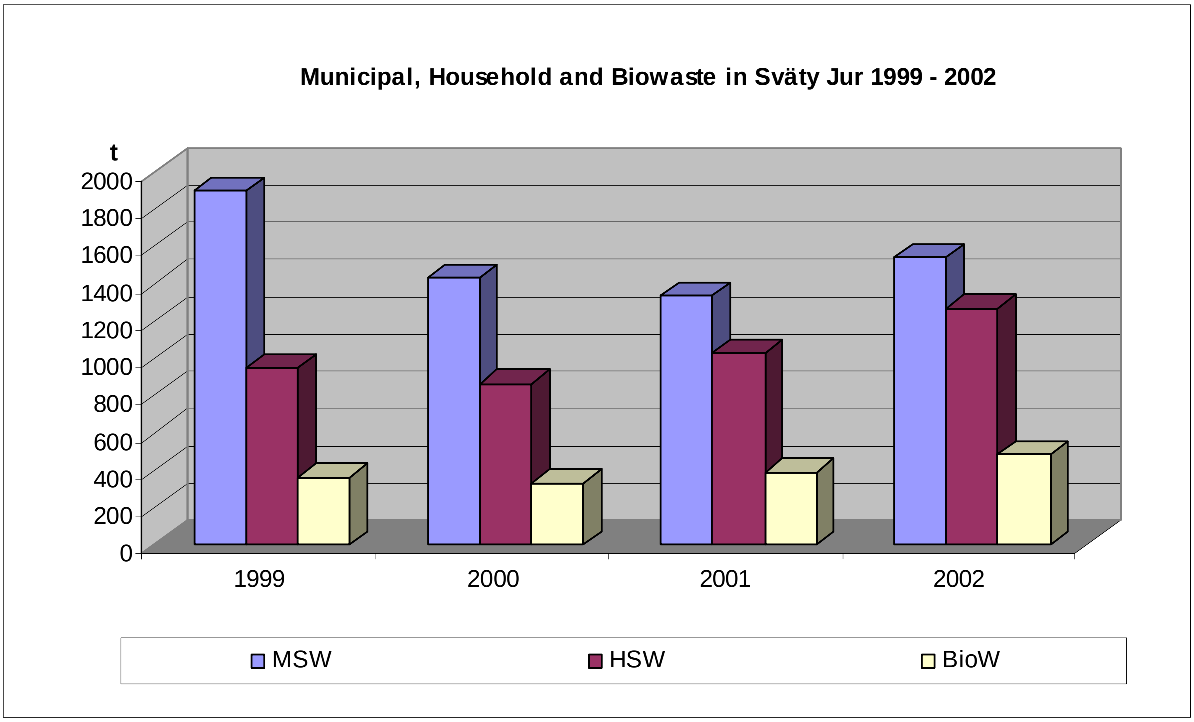


Source: Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

7.4 Waste and Biowaste Management in Svätý Jur

7.4.1 Municipal, Household and Biowaste Generation in Sväty Jur

The reported progress of municipal and hosehold generation in Sväty Jur for the last period known (1999-2002) is shown in the figure below. Due to lack of data, the biowaste fraction is calculated. The biowaste fraction in 2002 is higher due to the adoption of the new waste catalogue in Slovakia, thus separate average values are considered (1999-2001 and 2002).



Legend: MSW - municipal solid waste; HSW - household solid waste; BioW - biowaste
Source: Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

7.4.2 Municipal, Household and Biowaste Treatment in Sväty Jur

The municipal waste treatment in Sväty Jur is dominated by landfilling. In July 1996, the only landfill of Svatý Jur was closed down due to improper technical conditions of operation. The municipal waste from Svätý Jur has been ever since transported and disposed of at the landfill in Pezinok (at a distance of 9 km) - Pezinské tehelne - owned and operated by a brick kiln company. The municipality of Svätý Jur will not construct a new landfill on the own area because of its improper hydro-geological conditions. The municipality has to also sanitise six illegal waste dumpsites in its surroundings. The funding needed should be provided by the municipality itself.

According to the Generally Binding Regulation of the municipality Svätý Jur from 2001, the municipality is responsible for the municipal waste treatment. The municipality has contracted the private company PETMAS-Onyx Ltd. that provides the entire Pezinok district with waste disposal and transportation services. In turn, the PETMAS-Onyx Ltd company sends to the municipality a data sheet on the waste fractions separated. **According to the municipal environmental officer however, the data are not plausible (cr. Chapter 7.4.3). The company is not interested in waste separation and since in Slovakia no state structure with a controlling function exists, such as the waste unions in Austria, there is no quality guarantee for the waste separation performed by PETMAS-Onyx Ltd. As a cinsequence, the lack of reliable data, respectively, the lack of data at all (biowaste) does not allow for introducing reasonable waste fees by the municipality. (Source for this paragraph: Minutes to the Meetings of the Steering Group in Sväty Jur, held April – September 2004).**

Last but not least, **the human factor in the municipal administration of Sväty Jur has played a crucial role in the municipal waste management:** just in March 2004, with the assumption of office by the new municipal environmental officer, active changes in the current waste management towards improving and harmonisation with the EU requirements have begun. This have enabled also a positive cooperation with the municipal administration within the COMPASK project.

7.4.3 Separate Waste Collection in Sväty Jur

Separate waste collection has been already introduced in Svätý Jur, however only for the fractions of glass, paper and metal scrap, and with assumption that separate collection of plastics will be provided in 2003. Separately sorted household waste fractions are not included in the total amount of waste generated in the city.

As for separate biowaste treatment, the local agriculture co-operative INTERSAD being also both a producer and an eventual utilisation option for biodegradable waste can provide in near future the opportunity for biowaste composting. However, as shown in the following table, no biodegradable waste (except of waste paper and cardboard) is separately collected

in Svätý Jur, and the target for separate collection does not correspond to the target for material recovery of biowaste (tables below).
Also, the average annual data on per-capita waste fractions in in the Pezinok District (where Sväty Jur is located) and in Sväty Jur **differ too strongly from each other and from the calculated value, under the same social and economic structure within the district**. **Furthermore, data on biowaste lack completely. Since the municipality of Sväty Jur does not collect waste data itself but relies upon the data sheets of the waste collection company PETMAS-Onyx Ltd, is can be assumed that the data provided by PETMAS-Onyx Ltd are not plausible and complete, on the contrary to the data from the Pezinok District:**

Amount of collected fraction of municipal waste in kg/cap*a					
Fraction of household waste	**Pezinok district (1999)**	**Svätý Jur (2000)**	**Svätý Jur (2001)**	**Svätý Jur (2002)**	**Targets for 2005**
paper	60,7	3,2	4,1	4,2	10
glass	16	2,3	2,8	2,2	13
scrap+metal	70	17,3	3,6	0,8	6
biowaste	34,9				3
plastics				1,0	6
hazardous					0,2
batteries					0,5
textile					1,3
TOTAL	**180,6**	**22,8**	**10,5**	**8,2**	**40**

Source: Kusnierova 2002, Municipality of Svätý Jur (PETMAS-Onyx Ltd.), Waste Management Plan of the Pezinok District, cited in the Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

Since in 2002 a new waste catalogue was adopted in Slovakia, two biowaste average values are used: for the period 1999-2001 and for 2002. Both values are calculated, since original data lack. For the calculation, the percentage of the biowaste fraction in the municipal waste in the Slovak Republic is used (38% of the municipal waste, Waste Management Plan of the Slovak Republic until 2005). The average biowaste generation in Sväty Jur is thus ca. 364,33 t or 78,33 kg/cap*a for 1999-2001, and ca. 481 t or 107,6 kg / cap*a in 2002, all disposed of by landfilling.

Goals for Biowaste Treatment in Sväty Jur until 2005					
	Material recovery	**Energy recovery**	**Incineration**	**Landfilling**	**Other (not specified)**
Biowaste	**40%**	**0**	**15%**	**30%**	**15%**

Source: Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

Achieving 40% of material recovery for biowaste means to separate and process by composting about 150 - 170 t/a of biodegradable waste in Svätý Jur, or nearly 32 - 37 kg / cap*a. Why 15 % of biowaste incineration are to be reached is not clear. One possible

explanation is seen in the investments for the upgrade of the enlarged waste incineration plant in Bratislava being wanted to return as soon as possible, thus biowaste incineration is considered as an attractive alternative for the investor (biowaste incineration costs of 75 Euro / t against 37,6 Euro / t for landfilling, cr. Chapter 7.4.5) (S. Antalova, personal communications, March 2004)
This plan and the goals seem however to be unrealistic when related to the current state of biowaste management (citation of Antalova, Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004).

7.4.4 Planned Measures for Biowaste Reduction in Sväty Jur

The Waste Management Programme until 2005 issued by municipality of Svätý Jur has defined the following measures to decrease biowaste disposal at landfills:

- Introduction of separate collection of biodegradable waste from households in co-operation with the citizens
- Separate collection of biodegradable waste; biowaste composting
- Support of these activities by economic instruments (not specified as of December 2003).

In June 2004, the municipal environmental and the waste management officers have developed an approach for the adjustment of the waste fees. The first step foresees the estimation of the real waste fractions generated in the municipality by establishing a “pilot street” for separate waste collection in Sväty Jur. The data will be extrapolated onto the entire municipality. This way, the waste amounts generated will be known, and adjusted waste fees will be introduced. Biowaste garden composting can be thus supported by a biowaste fee bonus (cr. also Chapter 10.5). The launch of the “pilot street” is foreseen to begin ca. January – February 2005, i.e. outside of the time scope of this project. (Source: Minutes to the Meetings of the Steering Group in Sväty Jur, held April – September 2004)
The currently active role of the municipality of Sväty Jur is based on, first, the fact that as of 1st May 2004, the waste management in Slovakia is already subject to the EC Directives in the field of the waste management, and second, the personnel changes in the municipality of Sväty Jur as of March 2004. Both has enabled a new, more effective role of the municipal administration in Sväty Jur. (Source: Minutes to the Meetings of the Steering Group in Sväty Jur, held April – September 2004)

7.4.5 Costs for Municipal Waste Treatment in Svätý Jur

According to the Generally binding regulation of the Municipality of Svätý Jur, each citizen is obliged to pay a fee for municipal waste treatment to the municipality.

The fee was established to be: in 2002: 340 SKK/cap = 8,4 Euro
in 2003: 400 SKK/cap = 9,9 Euro

This results in a total income of 1.580.000 SKK = 39.000 Euro (2002) representing ca. 65% of the total cost needed for the municipal waste treatment. The fee is thus not sufficient to provide entirely for municipal waste collection, transport and disposal, and the municipality supports the waste management from the municipal budget.

The citizens of Svätý Jur are not charged according to the waste amount generated but to the unit fee per capita. The cost for household waste treatment is given in the following table. According to a personal communication by the mayor of Sväty Jur and to the documentation available, **the waste fee covers only municipal waste collection and transport, but the costs for landfilling are covered from municipal budget (37,6 Euro/t in 2002)**.
The following table presents the progress of the total cost for municipal waste treatment in the period of 1996 – 2002:

Total Costs for Municipal Waste Treatment in Sväty Jur in 1996 - 2002		
Year	**Costs (SKK)**	**Costs per 1t of MSW (SKK/t)**
1996	640.239	544,00
1997	845.780	630,10
1998	1.041.548	713,50
1999	1.507.192	796,80
2000	1.424.339	999,05
2001	1.547.708	1 124,60
2002	**2.347.200 SKK**	**1.525,30 SKK/t**
	58.000 Euro	**37,6 Euro / t**

Source: Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

In the same time, estimations show that biowaste incineration costs amount to ca. 3.000 SKK/ t (75 Euro / t) and citizen pay, according to their location, 800 - 1000 SKK/a (20 - 25 Euro/a). Thus, for the company contracted for waste disposal, biowaste incineration appears the economically better option, on the contrary to the budgetary interests of the municipality and the principles of a sustainable waste management.

According to the municipal office, the costs for municipal waste treatment had the following structure in 2002:

Municipal Waste Treatment Costs: Structure in 2002		
Treatment Type	**Costs (SKK)**	**Costs (Euro)**
Landfilling	1.120.200	27.644
Collection and transport of municipal waste	1.151.200	28.409
Transport of large volume containers	64.800	1.600
Hazardous waste treatment	11.000	272
Total	**2.347.200**	**57.924**
Sanitation of illegal dumpsites	*102.000*	*2.517*
SUM	**2.449.200**	**60.442**

Source: Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

7.4.6 Summary of the Waste and Biowaste Management Situation in Sväty Jur

The current status of municipal waste and biowaste management in town Svätý Jur can be characterised as follows (data estimated, not measured):

- municipal waste generation in Sväty Jur was according to the old waste catalogue (year 2000) about **290 kg/cap**, according to the new waste catalogue (year 2002) about **320 kg/cap;**
- household waste generation in Sväty Jur was according to the old waste catalogue (year 2000) about **220 kg/cap,** according to the new waste catalogue (year 2002) about **270 kg/cap;**
- calculated biodegradable waste generation (without waste paper and cardboard) in Sväty Jur was according to the old waste catalogue (year 2000) about **80 kg/cap**, according to the new waste catalogue (year 2002) about **103 kg/cap.**

Notes: Comparison with other countries would not be correct because of the different waste definition, but such comparisons exist in the EU where biodegradable waste generation varies from 160 kg/cap (Italy) to 360 kg/cap (Norway). In EU countries, various methods for calculation or finding out of biodegradable waste content are being applied.

The data cited above need to be verified by direct measurements of the generated waste fractions, since the data sheets provided by the transportation and disposal company PETMAS-Onyx Ltd do not contain biowaste data, and the data available for the other waste fractions do not appear plausible. Just after having ensured reliable data on the waste generation in the municipality, adjusted waste fees can be introduced. The latter allows also for a financial bonus in case of biowaste garden composting. (Source for this paragraph: Minutes to the Meetings of the Steering Group in Sväty Jur, held April – September 2004)

- All municipal waste except separately collected fractions (paper, glass, metal) is disposed of at landfills
- The rate of separate collection for paper is very low 3 – 4 kg / cap*a
- Biodegradable waste (without paper and cardboard) is not collected separately
- Composting (centralised or decentralised) has not been introduced as a method to reduce biodegradable waste disposed of at landfill in Svätý Jur
- Svätý Jur considers to introduce measures for reduction of biodegradable waste going to landfill as follows:
    - to introduce separate collection of biodegradable waste from households in co-operation with the citizens
    - to collect biodegradable waste separately and ensure its composting
    - to support these activities by economic instruments

- In terms of planning, a contradiction exists between the goals established in the obligatory part of the Waste Management Programme of Svätý Jur and targets for separate collection system
- Achieving targets for biodegradable waste as 40% material recovery, 15% incineration, 30% landfilling and 15% other treatment (wastewater sludge) appears unrealistic
- About 192 tons of biodegradable waste should be separately collected and composted in 2005
- Each citizen should separately collect about 40 kg of biodegradable waste per year.

Note: The average collection rate for biodegradable waste collection in Slovakia in 2001 was 1,4 kg/cap, in Svätý Jur none.

Note: 70% of biodegradable waste (ca. 340 t) should be diverted from landfilling and should be composted or incinerated. According to the Statistical Office of the Slovak Republic, only 10% of MSW was composted in 2001.

The current status of waste management costs in town Svätý Jur could be characterised as follows:

- Citizens pay a fee covering the waste transport, the municipality pays for the municipal waste treatment (disposal)
- The waste fee for citizens was 340 SKK (8,4 Euro) in 2002, in 2003 - 400 SKK (9,9 Euro) per capita
- The waste fee cannot cover all expenses connected with municipal waste handling
- The citizens pay the unit fee per capita not depending on the amount of waste they generate
- The citizens and other individual and legal entities generating municipal waste pay for the number of containers to be emptied according to an approved schedule which they cannot influence
- Price for collection, transport and disposal is established and agreed upon with a contractor (waste operator) not per ton, but per container according to its volume and the frequency of emptying and transport.
- The waste fee structure and the way this fee is established are not clear.
- There is no incentive for the citizens to reduce waste generation because they would pay the same price
- It should be the interest of municipality to introduce a better system of waste management financing to motivate citizens and pay for the real amount of waste generated.

8 Activities and Results

The project activities performed and the results achieved are summarised below:

- Austrian know-how transfer: Know-how exchange visits
- Opinion poll in the municipality of Sväty Jur
- Development of an Implementation Plan for establishing the biowaste garden composting in Sväty Jur
- Initiation of an awareness raising processes:
  - school subproject and a school cooperation: Biowaste Garden Composting at Schools in Sväty Jur and in Vienna
  - Initiation of a kindergarten subproject: waste separation and biowaste garden composting in the two kindergartens of Sväty Jur
- Initiation of participative processes in the municipality of Sväty Jur: establishment of a Steering Group on garden composting on a voluntary base, aiming at developing own biowaste management initiatives in the municipality and towards a constructive cooperation with the municipal administration
- Project PR activities: project presentations at the Slovak Ministry of Environment, December 2003; at the inter-ministerial event Austria – Slovakia "Erweiterte Umwelt" in Vienna, November 2003; at the Biowaste Workshop in Zilina, January 2004; Project presentation at the Klimabündnis - Work Meeting Lower Austria and Slovakia, March 2004; Press release, October 2004; publication in the "Waste Management World Magazine", Sept./Oct. 2004 issue; development of a project homepage. All related documents are attached in the Appendix.

In the following, a description of each activity and the corresponding result is presented.

8.1 Know-how Exchange Visits

In total, three know-how exchange visits have been performed (Bruck / Leitha district; Sväty Jur and municipal feast in Sväty Jur). The focus was laid on facilities and plants for waste and biowaste treatment (agricultural composting and garden biowaste composting in the Bruck / Leitha district; a district centre for waste collection and material recovery in the Bruck / Leitha district; a landfill and a biowaste and soil purification plant in the Pezinok district in Slovakia). The following discussions served the elaboration of a pattern-fitted transfer of the Austrian technology to Slovakia. At the municipal feast in Sväty Jur, the local NGO promoted by its own initiative the biowaste garden composting and supervised the citizens.

8.1.1 Know-how Exchange Visit in the Bruck an der Leitha District (Schwechat – Trautmannsdorf – Mannersdorf – Deutsch Haslau)

The exchange begins with a visit of the BG and BRG school in Schwechat (vicinity of Vienna) where biowaste and garden waste have been composted within the school garden for the last 10-12 years. Biowaste is collected in a biobin in the schoolyard, certain food leftovers that might attract rats, or residual waste misplaced, are separated into a residual waste bin next to it:

The biowaste (together with the garden biowaste) is composted directly on the ground in the garden:

The garden composting is supervised by a teacher supported by one student of each class. The ripe compost is utilised in the school garden.

The next know-how exchange activity is a visit to an "average household" in Trautmannsdorf, Bruck an der Leitha district (Province of Lower Austria), where an example of biowaste garden composting in an Austrian household (single house) is presented. The family demonstrates their concrete biowaste box in the garden and the correct way of layering biowaste and structural material:

The compost then ripens on the ground in the garden, and is finally applied there as well:

In Mannersdorf, the Waste Collection and Recycling Centre presents an overview over the recyclables collection and logistic system in Austria, where biowaste also belongs to the category of recoverable materials (demolition waste, waste wood, waste plastics, waste glass, waste paper, waste cooking oil, metal scrap, waste tyres, electric and electronic waste).

The Slovak participants enquire on the nature of the collection concept (a bottom-up or top-down initiative) and the features of its implementation, as well as if the citizens have been motivated to participation by fiscal means. The Austrian participants confirm that the concept has been a top-down activity, but neither fines nor other penalties have been foreseen (nor applied) for the citizens in case of non-performance. The only means has been thorough information and PR work.

However, this combination of top-down initiatives and PR work can be very well successful in Austria, since here there is no negative background in this regard, as experienced in the former socialist countries.

The last station of the know-how transfer is the agricultural composting plant in Deutsch Haslau. The composting plant operators inform on the key plant parameters (surface, construction and cost history; treated biowaste; collection and distribution scheme; compost prices and utilisation), and demonstrate the work steps in the operation cycle: biowaste delivery, turning over, moistening:

The Slovak participants discuss actively on the biowaste treatment options; compare investments, prices and feasibility with the Austrian experts and the composting plant operators in individual and group discussions.

8.1.2 Know-how Exchange Visit in Sväty Jur

The visit of the (bio)waste treatment facilities in the Slovak pilot region (Sväty Jur and District Pezinok) serves an overview over the waste management situation in the pilot region (municipality of Sväty Jur and Pezinok District) and thus to identify potential solutions for the biowaste utilisation to incorporate in the specific waste management background and companies involved.

The exchange begins with a visit to the Municipal Waste Collection and Recycling Centre Pezinok. The PETMAS-ONYX Ltd. company in the municipality (and District centre) Pezinok is the operator of the collection point for separately collected waste from municipal waste and is also contracted by municipality of Sväty Jur to provide collection and transport as well as disposal of household waste. It also operates for other municipalities in the Pezinok district. In some municipalities, waste paper and PET bottles are separately collected, both together by common containers. At the waste collection and recycling centre, cardboard, waste paper and PET bottles are then manually sorted and sold further.

Within a pilot project (started 1995) in the municipality of Pezinok, biowaste is also separately collected. In settlement sections of one-family houses, the company proves satisfactory collection rates as to biowaste quality. However, were residential buildings concerned, biowaste containers (1.100 l) were quite contaminated with foreign materials, thus the containers have been cancelled. Generally, the costs for recyclables collection are covered by each municipality; this determines also the container density and the collection frequency.

The EBA-PEZINOK company is the operator also of the composting and soil decontamination facility and processes the following materials:

- Contaminated soil (most often soil contaminated by mineral oil, originating from the SLOVNAFT refineries and some accidents causing soil contamination)

- Agricultural biowaste, e.g. chicken and horse excrements, hay
- Sludge from the waste water treatment plant
- Grass and bush cut-offs from public gardens
- Separately collected biowaste in the municipality of Pezinok

According to the company manager, the price rates amount to ca. 7,- Euro / t biowaste delivered.

The output is soil mixtures of pure soil (upper layers), compost and decontaminated soil. It is sold to customers to be applied mainly for landscape recultivation (sports facilities, road embankments, etc).

The contaminated soil is treated by substance ROPSTOP to run biodegradation of organic contaminants under conditions prescribed (humidity, additive materials, oxygen supply). Material is treated on a surface covered with concrete panels, the joints however without being sealed. The surface runoff is collected in a basin, where it is processed (sedimentation and filtration to separate water from oily compounds).
Chemically non-contaminated materials are composted on clamps, without surface insulation or coverage. Once disposed, the material is not turned over. No residual waste could be detected in the composting material. There are four monitoring drills around the place from which samples of groundwater are taken and analysed once a month.

The Sväty Jur landfill could not be visited, since it is already closed. The municipal waste of Sväty Jur is currently disposed on the Pezinok landfill. The latter is also due to closure, with a new one planned to be constructed right next to it.

As a last activity of the visit, a general registration of the Settlement Structure of Sväty Jur was performed. Two typical single houses with gardens were visited. Both are located in the centre of Sväty Jur. Both are characterised by an elongate garden structure; the gardens border at the ancient city wall. The owners of the first house visited have installed a biowaste composting box in the garden; most of the garden surface is used for vegetable growing. The second garden includes also a chicken barn, and part of the biowaste is fed to the chickens.

8.1.3 Promotion of the Biowaste Garden Composting at the Municipal Feast in Sväty Jur

From 25th to 27th April 2003, the traditional municipal feast in the Scheifling Garden of Sväty Jur took place. Music, open-air theatre and art exhibitions were presented by local artists. The local NGOs, Family Centre and Academia Istropolitana Nova (AINOVA) integrated again the issue of environmental protection within the animation programme, this year with introducing the biowaste garden composting as a special focal point.

The initiative originated from local NGO members and AINOVA students, coinciding with the ongoing INTERREG IIIa Project COMPASK where both the municipality of Sväty Jur and AINOVA are Slovak project partners. The goal was to present the idea of garden biowaste composting at once to as many citizens as possible, emphasising on:

- the necessity of providing the municipality with a tailored (bio)waste solution, which would both save costs and prove positive environmental effects, just as garden composting does, and
- the attractiveness of composting and compost, being a most natural process and product, allowing for a fast and efficient closing the material cycle of biogenous matter.

For visual materials (posters and information) and various "compost games", the organisers were supported by the know-how of the Austrian COMPASK project partners. The biowaste garden composting found the highest support among the children:

So for instance, the most popular game at compost parties in Lower Austria took its successful start in Sväty Jur as well, with the goal being to recognise and name as many as possible "compost inhabitants" (insects, worms, etc):

8.2 Opinion Poll in the Municipality of Sväty Jur on Introducing the Biowaste Garden Composting

Data source for the entire Chapter: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

Between April and June 2003, an opinion poll was conducted in the municipality of Sväty Jur, aiming at:
- investigating the attitude of the citizens towards the introduction of biowaste garden composting,
- deriving thinking patterns and social layers in the municipality, so to develop adjusted PR measures (as planned under the assumption of a twinning PHARE project), and
- preparing the citizens for further project activities (as planned under the assumption of a twinning PHARE project).

8.2.1 Socio-economic Description of Sväty Jur

The town of Svätý Jur is exclusively a viniculture settlement, where other production activities carry only a supplementary function to the wine production. Even nowadays with the town populations of 4467 residents, viniculture plays a crucial role in terms of the collective farm production within the town. Despite the viniculture land, with a typical terraced arrangement, undergoing a lot of changes in the interest of mechanical technology for cultivation, it still represents the most preserved country in the Lower Carpathians region. Analysis of natural conditions further show an intensive impact of agricultural land cultivation, urbanisation and even non-directed recreation have noticeably weakened the biological potential in sizeable part of the natural area over a few decades. The main concern also lies in the drastic drainage of Šúr (national nature reserve), with the current intensive agricultural production and cultivation in a vast part of the buffer zone of this protected area with minimal bio-diversity and risk and inclination to erosion.

The overall character of the town is that of viniculture with several variants of grape functioning as main crops. Despite the fact that the arable land area is slightly larger than that of the vineyards, corm, grain and other agricultural crop cultivation take place in the buffer zone of the national protected reserve Jurský Šúr.

As far as waste management and the corresponding legal regulations are concerned, entrepreneurial subjects (companies and individuals) are, regardless the production volume or local employment (less than 30%), insignificant. Vegetable and poultry production, wine and beer production, commerce, services building, transport and car service are main entrepreneurial activities, and they do not cause any major environmental loads in the area's land register.

The population and accommodation structures, both being the crucial framework for the possible schemes for separate biowaste disposal and treatment (centralised composting, garden composting) are summarised in the following two tables:

Population Structure in Sväty Jur		
	Inhabitants	**Labour force**
Men	2115	1183
Women	2352	1137
Total	4467	2320

Source: Municipality office of Svätý Jur (2002), cited in Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA

It is significant for the current labour force of Svätý Jur that almost 80% of it commute to work to Bratislava or Pezinok.

Types of Accommodation			
	Individual Houses	**Flat-building**	**Total**
Accommodation units	1312	478	1790
Inhabitants	3364	1287	4651
Households	1153	430	1583

Source: Municipality office of Svätý Jur (2001), cited in Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA

8.2.2 Framework for the Opinion Poll

The opinion poll was carried out within 3 days in June 2003. 120 households (8%) from Svätý Jur were interviewed by filling in the questionnaire. The individual households were chosen in a manner to cover all important (with regard to the aim of the study) classes of inhabitants.

The questionnaire (in the Appendix) consisted of four parts:

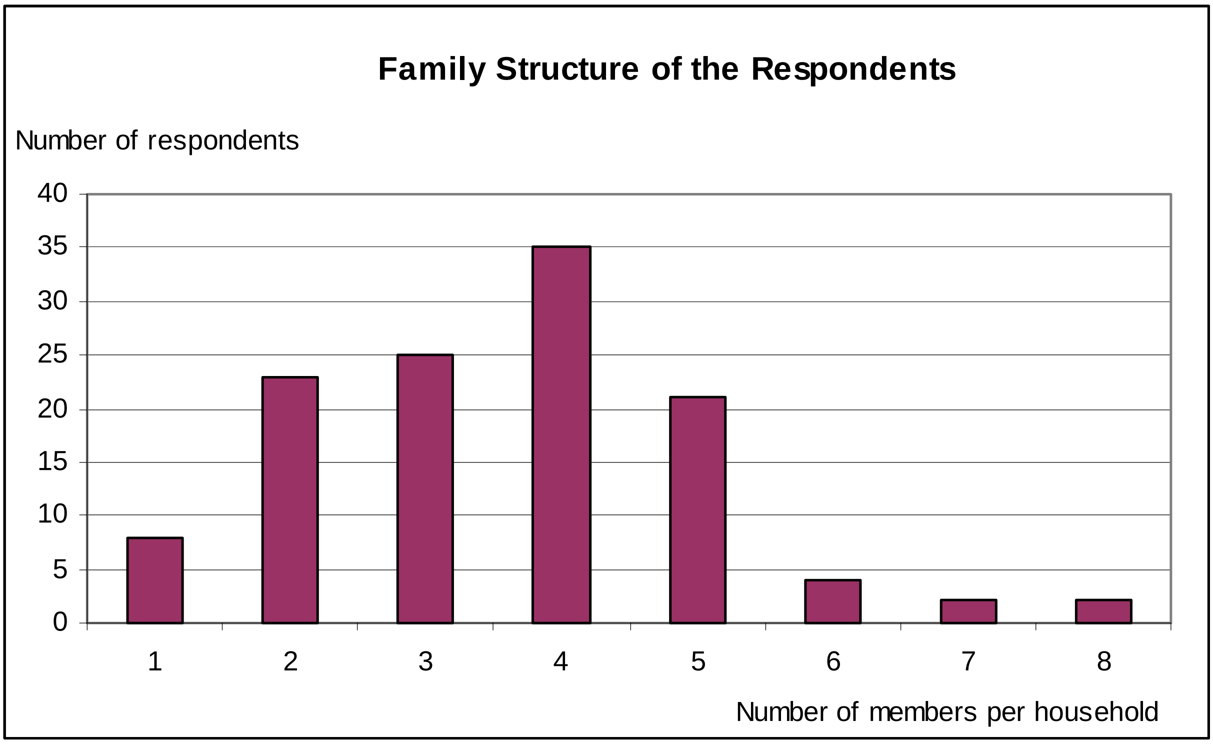
I introduction - information for resident about purpose of public survey
II part - questions related to type of accommodation
III part - questions related to the awareness of the citizens concerning composting and the question if they do composting or not
IV part - information for citizens on the relation of biowaste to household waste and on the annual fee payment
V part - questions related to a suggestion for changes in the municipal MSW management
VI part - personal data and basic information on the households

The respondents number according to age groups is shown in the table below:

Age Structure of the Respondents	
Age	**Number of Respondents**
18-30	35
31-45	39
46-60	29
>60	17

Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

The majority of the respondents (87%) live in households of 2-5 members:

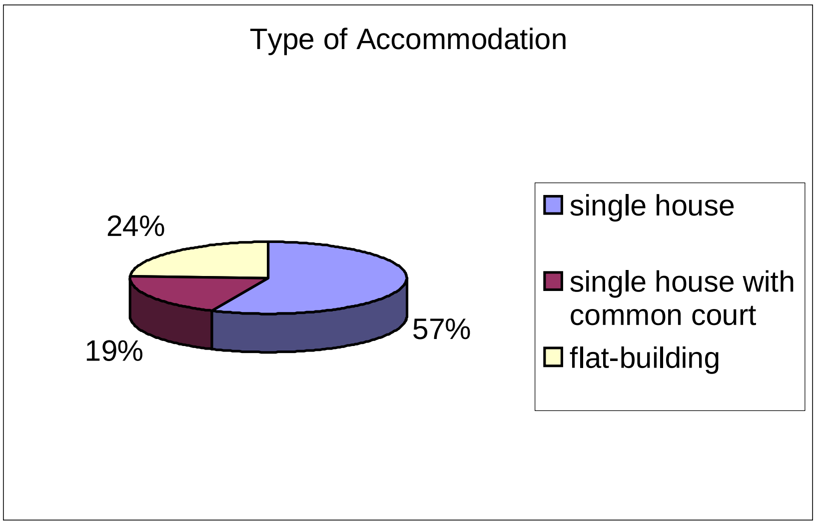


Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003
Graphics: ÖGUT

8.2.3 Results from the Opinion Poll

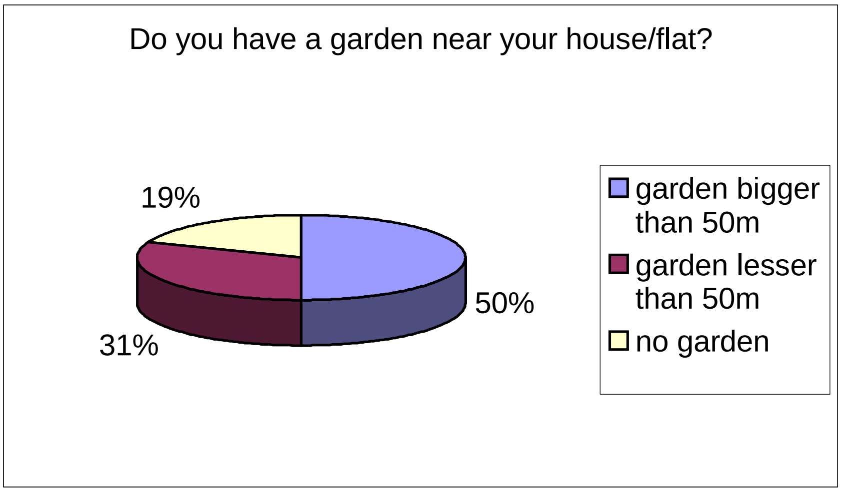
8.2.3.1 Type of Accommodation

The following figure presents the accommodation structure in Sväty Jur. More than the half (76%) of the population live in single houses, which offers an advantageous prerequisite for biowaste garden composting:



Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

About 24% of inhabitants live in flat buildings, with a different type of waste collection and a low connection to the surrounding green areas. Semi-detached houses are widespread in the region, being old vineyard houses with a common gate and yard, but with single independent houses inside of it. Relations of neighbours in this accommodation type are not always very cooperative, and property rights are very disputable.

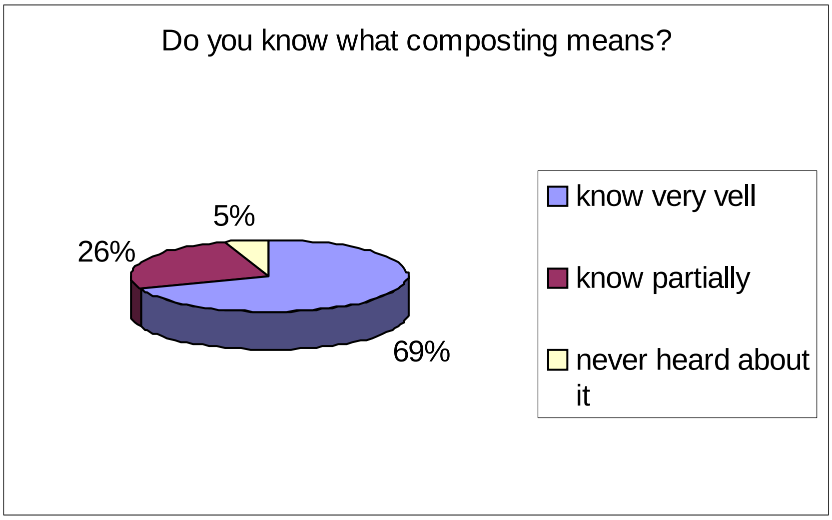


Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

Most citizens of Sväty Jur (81%) dispose of at least a small garden nearby, including a number of flat buildings in the south of Svätý Jur, offering a good framework for garden composting. However, there are also single houses, especially new ones, without gardens.

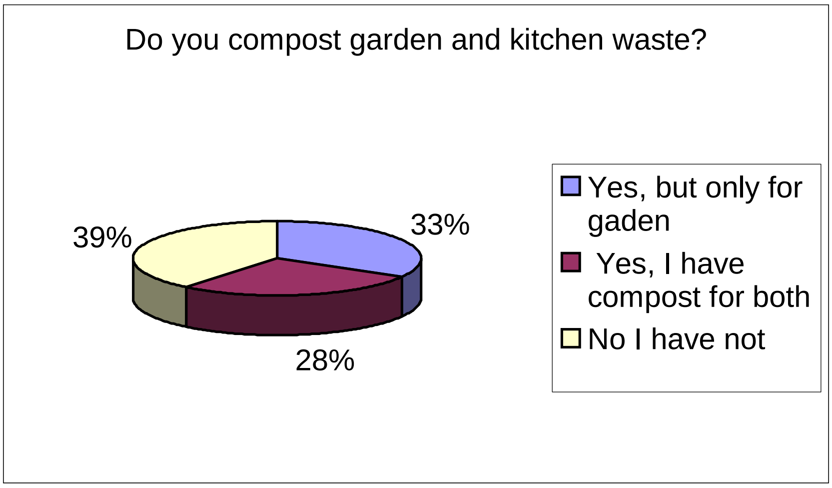
8.2.3.2 Attitude to Biowaste Garden Composting

The opinion poll shows that the vast majority of the citizens in Sväty Jur are well familiar with composting, which would positively effect on PR measures. An interesting fact is that all 6 respondents, which never heard about the term “composting” or “compost”, were aged 18 - 30.



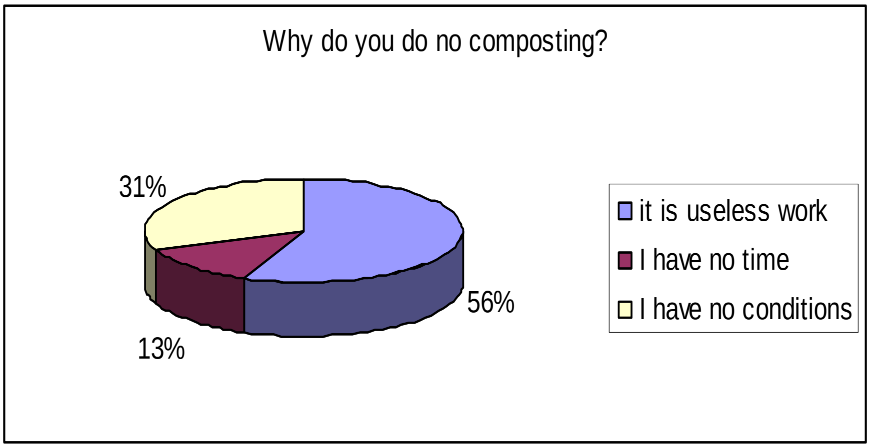
Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

The crucial questions referred to the practical activity of the citizens in terms of biowaste garden composting and to the reasons some do not. In total, 61% compost their biowaste in the garden, half of which apply composting only for garden biowaste:



Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

Half of the group (22% all respondents) who declares they do not practise biowaste garden composting pointed out the lack of suitable conditions as a reason. A positive result is the fact that only a minor group (26 respondents - 5% of all) consider it not reasonable at all. From the latter, just 3 respondents live in single houses with common courts, the rest live in flat buildings.

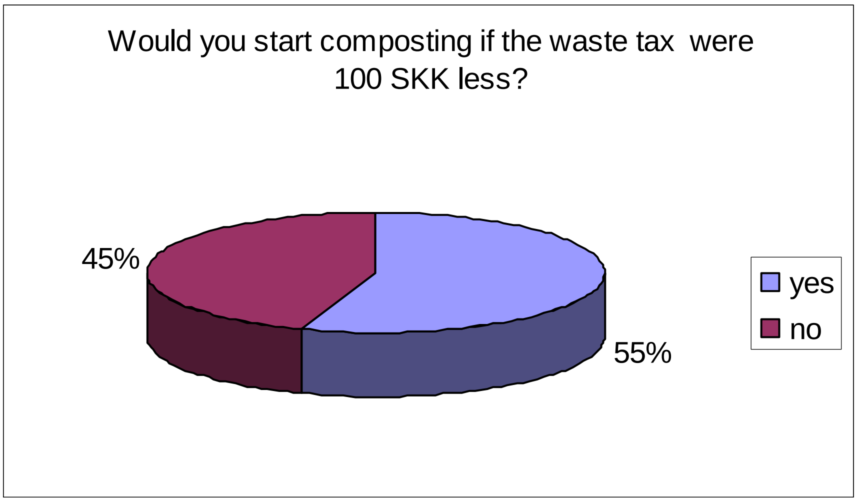


Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

The following question clarifies if is possible to support establishing common biowaste garden composting in the green areas nearby flat buildings. The respondents support this suggestion, the majority having replied positively. However, the issue of the maintenance responsibility for the compost seems to be very problematic.

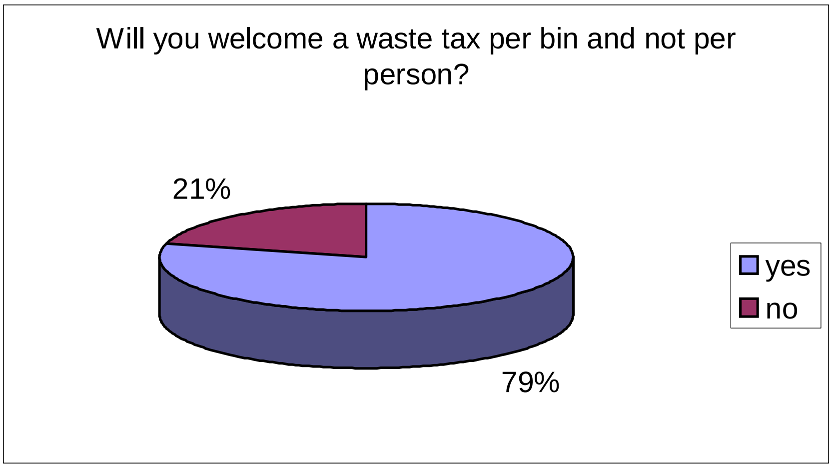
Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

The next questions should offer information on the relation between behaviour habits and eventual changes in the waste fee (waste tax). However, a fee reduction scenario is rather unrealistic, since for the municipality it would be impossible to decrease the waste tax lower than 100 SKK, the tendency would be rather to increase it. For the citizens - when considering the prices of other commodities - 100 SK is a negligible sum to change their habits. This attitude signalises that under the current waste cost factors, a behaviour change can be expected rather on voluntary terms.



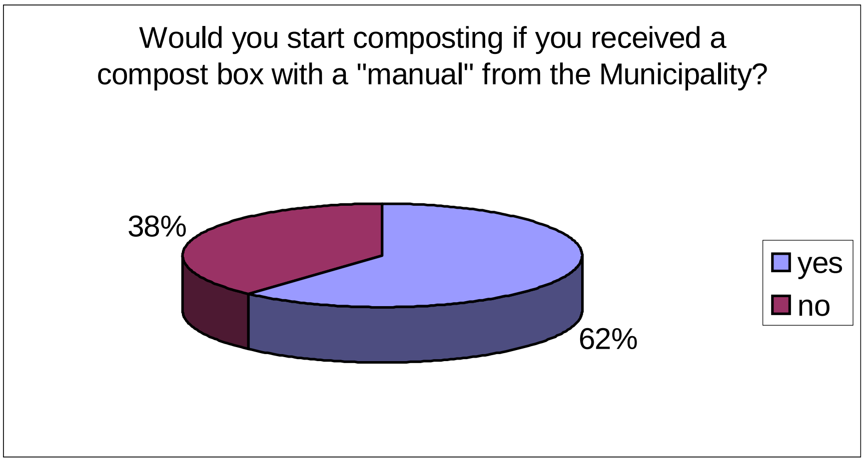
Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

The next question refers again to the currently inefficient waste fee system in the municipality: the residents pay annually a waste fee per capita, and such an approach does not motivate them to reduce the generated waste amounts. For example, families who practise biowaste composting and waste material recycling, or families with more children have no advantage compared to households that ignore these activities. The decision is based just on “good will to be green” and is not supported by any municipal activities.



Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

The answers of the following question support the relevant role of an “external driving force” / “outward initiative”, indicating the lack of any own one, i.e. citizens would follow an instruction issued by the municipality, but would rather not intervene first themselves:



Source: Opinion Poll in the Municipality of Sväty Jur, June 2003, Andrej Breziansky, AINOVA, 2003

8.2.3.3 Summary of the Opinion Poll

The main outcome of the opinion poll can be summarised, as follows:

- the majority of households is already composting garden biowaste
- kitchen waste composting is not very common in municipality
- the majority of non-composting households is ready to start by change of conditions or by some kind of support or a foreign initiative
- the majority of households will welcome a change in the municipal waste management, and in particular of the waste fee system.

8.3 Implementation Concept for Establishing the Biowaste Garden Composting in Sväty Jur

Source for the entire chapter unless otherwise indicated:
Implementation Plan - Garden composting in Svätý Jur, S. Antalova, 2003-2004

The Implementation Concept for establishing the Biowaste Garden Composting in Sväty Jur is developed by the Slovak and the Austrian project consultants, Dr. S. Antalova and J. Leutgoeb, and is foreseen to serve the work of the municipality and the Steering Group as a base for own activities within the biowaste management.

The municipality as a municipal waste generator and holder being responsible for the municipal waste management should develop and introduce a municipal waste management that complies with the basic principle of waste management strategy, the waste management hierarchy.

This principle is focused on waste prevention and waste recovery, especially material recovery. Biowaste garden composting prevents household waste generation. Centralised composting can be included in material recovery methods. Both options lead to reducing of biodegradable waste disposal at landfills, as in the case of waste management in Sväty Jur.

The benefit for the municipality would both environmental and economic ones, especially in the cases when the municipality pays for waste transport and disposal according to the real amount of household waste to be disposed of.

To enable these benefits, the municipality should deal with three kinds of issues:
public awareness
realistic planning of biodegradable waste management
financing of household waste handling
supporting centralised and decentralised composting

8.3.1 Public Awareness

The information campaign should be plan and launch as soon as the waste fees are defined. The topics to inform and educate the citizens should be focused on:

- environmental benefit of decentralised composting
- composting in garden (equipment and procedure)
- utilisation of compost
- possibility of waste fee reduction for household waste
- environmental education – sustainable development

The information campaign should address the following groups of receptors:

- representatives of municipal and state administration relevant to waste management, especially planning
- citizens living in family houses
- citizens living in blocks of flats but having hobby of gardening
- schools and other educational institutions

- public institutions having parks or green area
- companies, services generating biodegradable waste suitable for composting

Methods to prepare and launch the information campaign should consist of:
- information leaflets explaining in simple and interesting way the main idea are spread among the citizens
- articles describing this activity in the local newspaper
- promotion of activity at local feasts and events
- information brochures sent to local municipal groups, NGOs, schools and chosen institutions

Besides the information campaign, citizens who are active in public life could be trained in the field of waste management and rights and opportunities for citizens to influence services in municipal waste management, including the planning, financing and cost regulation at municipality.

8.1.4 Planning the biodegradable waste management in Sväty Jur

As an essential base for planning, an analysis of current status must be done. For this, the basic question about the amount of biodegradable waste generation in the town should be answered. The calculation used in this document (Implementation Plan for the establishment of the biowaste garden composting in Sväty Jur, S. Antalova) has been based on general information about the composition of household waste published in Waste Management Plan of the Slovak Republic 2005 and need not reflect the present time and local conditions. To avoid these uncertaintities, the analysis of the household waste composition should be executed with the goal to discover the potential for separate collection not only of biodegradable waste but of all valuable fractions of households waste as well.

Also, the reports on biodegradable waste generated by the institutions in the municipality should be investigated.

After the analysis of the current status, realistic goals for biodegradable waste managements should be defined (different from the ones existing now), and optimal measures to reach these goals should be chosen and planned.

8.1.5 Financing of waste management in Sv. Jur

The way financing and cost for municipal waste handling are set in Sväty Jur until the end of 2004 do not allow to introduce a lower waste fee for citizens who would compost all biodegradable waste generated in their households, i.e. the economic incentive is lacking. In general, the citizens pay not for amount of waste they generate but for the volume of waste bins or containers to be emptied, regardless if they are full or not. If a citizen reduces the amount of household biowaste by decentralised composting at the highest possible level, no reduction of his fee by the municipality is expected.

The citizen is not motivated also because 50% of the total costs are paid by the municipality. The municipality, on its turn, should be motivated to pay less for household waste disposal at landfills. And finally, the financing and cost structure need to be more transparent.

To implement the economic incentive would mean to change the whole system of waste management financing on municipal level and also to introduce fees for real waste generation.

8.1.6 Supporting centralised and decentralised composting

The municipality should play, together with other public institutions and other public groups, the vital role for increasing the public awareness in the way described in the upper chapter.

In terms of centralised composting, the municipality is responsible for planning and ensuring the building of composting facilities. Such a plan exists in Sväty Jur, and the local agriculture cooperative INTERSAD is a suitable place to provide composting. More space for municipal activity is open in the field of suitable biodegradable waste collection, for example from vineyards, parks, green public parks, the cemetery, etc. Also, a prohibition to put such waste to bins and containers for mixed/rest waste directed to landfills should be implemented (this should be a part of the general binding regulation).
On the other side, the product of the material recovery of bowaste, the compost, should have a guaranteed market for use. The municipality can enable the needed conditions for compost market/usage.

The encouragement of decentralised composting should be also part of the municipal waste management plan, e.g. by implementing a pilot project.

8.1.6 Benefits identification

The benefits for the municipality can be divided into general and specific benefits.

<u>General benefits for the municipality:</u>
- improvement of environmental behaviour/education
- ability to reach the goal for reduction of biodegradable waste disposal at landfill
- efficient low-cost measures in waste management without expensive technical equipment
- possibility to save finance from municipal budget

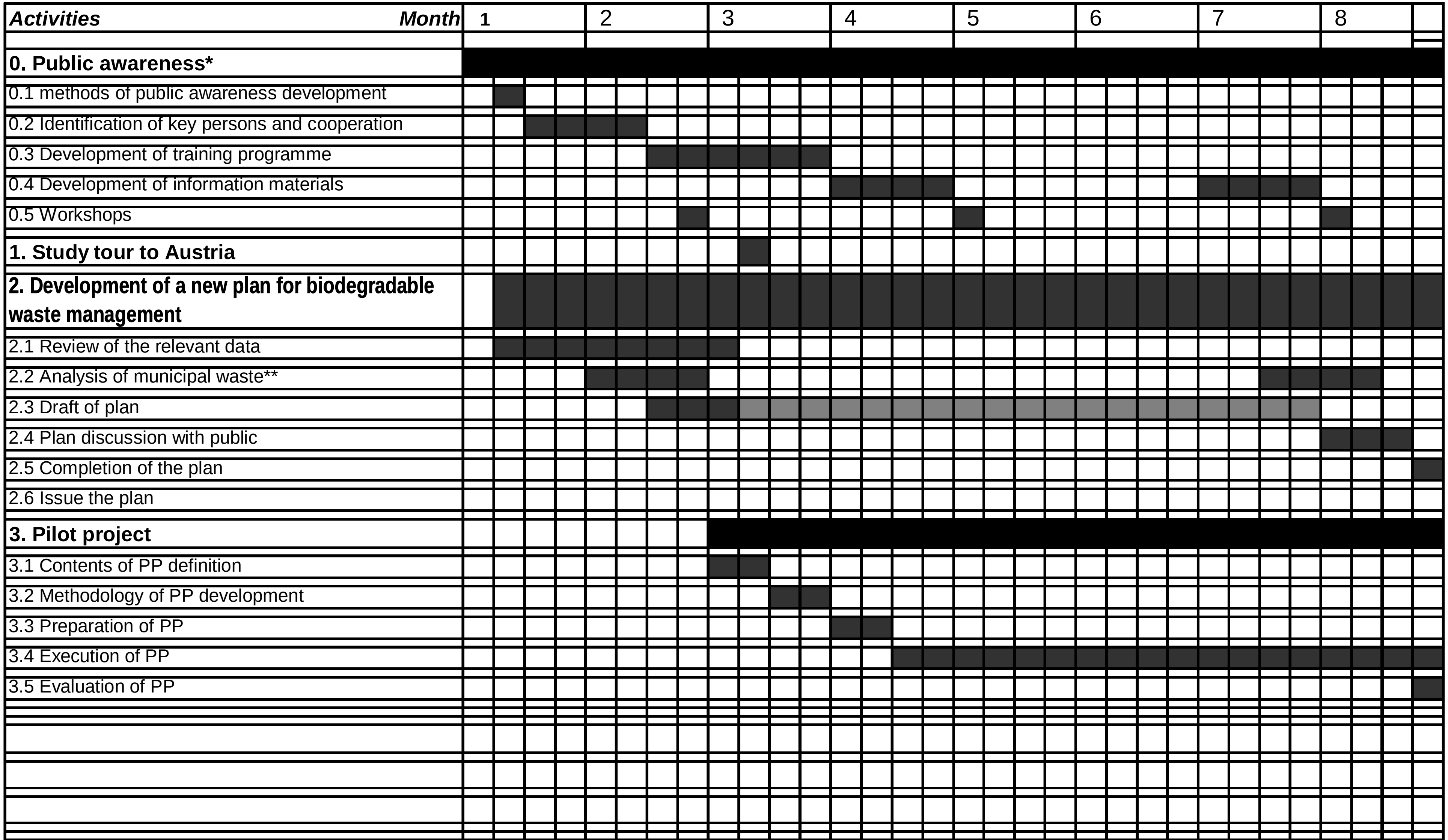
<u>Specific benefits for the municipality:</u>
- opportunities to improve biodegradable waste management with the help of experienced partners, waste prevention and waste recovery
- challenge for better planning using supervising of experienced partner
- possibility to save finance for the citizens
- exchange of ideas and information

8.1.7 Conclusions

After the analysis of the current status of the municipal and biodegradable waste management in Sväty Jur, the following milestones of the implementation plan are suggested to be used as a preliminary basis for discussion with the municipality. The following table presents the model activity raster, and the following timetable suggests a model timing for each activity, and is not related to a specific calendar year.

The following table and the timetable present the described activities as workpackages and chronological disposition. This concept can be used, with small amendments, for any another suitable municipality in Slovakia:

Recommended Activities for Biowaste Garden Composting Establishment in Sväty Jur (transferable on any similar Slovak municipality)				
Activity	**Objective**	**Task for municipality**	**Austrian expert input**	**Note**
Analysis of municipal waste content focused particularly on biodegradable part of mixed waste	To get clear picture of current status and discover the potential	To ensure cooperation with municipal waste operator	Development of the appropriate methodology for analysis	Financing of analysis execution have to be discussed
Development of a new plan for biodegradable waste management	To avoid the unrealistic planning To create a new basis for cost calculation	Cooperation with Austrian experts	The basic outline of plan Recommendations to develop a new goals and measures regarding biodegradable waste management	The Slovak planner might be involved.
Public awareness activities preparation and execution	To increase the environmental understandings of waste management topics To create conditions for successful implementation of decentralised composting	Cooperation with Austrian experts	Advise of Austrian expert Help preparing information materials Methodology of dissemination of information	Solution regarding financing of information campaign should be found
Pilot project for decentralised composting prepared	To demonstrate the activity with all benefits it brings. To get results of waste prevention and reduction of biodegradable waste disposal at landfills.	To ensure cooperation with participants of pilot project/citizens Cooperation with Austrian experts	Methodology of Pilot project Supervision of Pilot project	Financing of Pilot project has to be solved out. Slovak coordinator of Pilot Project is needed.
Evaluation of Pilot project	To check the goals and measure in proposed plan To identify the gaps and problems to reach the goals of plan	Cooperation with Austrian experts	Report of result of Pilot project with conclusions and recommendations for improvement.	Report should be carefully discussed with municipality representatives
Development of integrated strategy for biodegradable waste management in municipality	To combined in suitable way the options of centralised and decentralised composting to reach efficient biodegradable waste management	Cooperation with Austrian experts	Know-how from Austrian municipalities, examples of integrated plans adjusted for Slovak conditions	Slovak planner should be involved.



* see page 24 of the Implemenattion plan

**if analysis of MW was executed analyse the results, if not execute the physical analysis of MW to get the picture of the real content

8.4 Initiation of an Awareness Raising Process in Sväty Jur

Schools and kindergartens represent an option of a greatest multiplicator potential and offer, through the age groups involved, the most attractive prerequisite for awareness raising and its positive long-term effect. The COMPASK project generally aims at conveying the comprehension that biowaste is no “waste” but a valuable good and is thus to be separately collected and utilised. The successful integration of the school and the kindergartens in Sväty Jur as well as of two schools in Vienna in this project illustrates the advantage of the early age as a key factor for steering social processes, such as awareness raising, also in the field of municipal waste management.

8.4.1 Biowaste garden composting at schools

Viennese schools prove a long-term tradition in implemented projects on sustainable waste management and environmental protection. Further, the project "Naturnahe Gartenführung" ("Near-natural gardening") demonstrated the successful possibility of linking both subjects.

The COMPASK project partner "eco counselling" Vienna has prepared a thorough concept for introducing also the backyard composting at schools (all materials, in Slovak and in German, are attached in the Appendix). The concept is being (2003/2004) implemented at two Viennese schools. After interviews with a number of schools in Vienna, two pilot schools have been selected, namely the "Kl. Sperlgasse" school in the 2nd District and the "SPZ Steinbrechergasse" school in the 22nd District. Both schools have already successfully participated in earlier projects of the "eco counselling" Vienna. The location of the schools - in an inner and an outer district of the city, respectively in the centre and in the suburb of a congested area - corresponds most closely to the COMPASK project idea to investigate the potential and the limits of backyard composting under different framework conditions.

The school sub-project of COMPASK aims at the all-over integration of the backyard composting into a school subject (e.g. biology) and is being implemented by the teachers together with interested students in four classes. A key factor is the entire involvement of the academic institution into the awareness building process, i.e. from the school principal and the teachers over students and parents up to the school caretakers.

The "eco counselling" Vienna prepares a full-course teaching materials for the teachers to utilise in the education. The pedagogic work is accompanied by the ongoing tuition by the "eco counselling" Vienna. The teaching materials are supposed to be transferable onto the Slovak schools with no further need of adaptation.

The following results of the school sub-project of COMPASK are secured:
- Comprehension of the biological processes in the compost,
- Waste management integration in the general education,
- Integration of knowledge of composting processes in the biology lessons,
- Utilisation of the multiplicator potential of the schools.

The school sub-project of COMPASK consists of a preparatory phase, implementation phase in Austria and a planning and implementation phase in Slovakia (Sväty Jur). The experience in Austria has been thoroughly recorded and handed over to the Slovak colleagues as additional support. The "eco counselling" Vienna has prepared a financial plan for the implementation in Slovakia as well, which can be used as a pattern for the Slovak colleagues.

8.4.1.1 Biowaste garden composting at the SPZ "Steinbrechergasse", Vienna

Contact:
Steinbrechergasse 6, A-1220 Vienna
Phone: +43 1 203 63 92
Fax: +43 1 203 63 92-311
Web: http://www.schulen.wien.at/schulen/922013

The Social Pedagogical Centre "Steinbrechergasse" is owned by the City of Vienna (MA 56) and is located in the suburbs of Vienna, i.e. the 22nd Viennese District. The school has 12 classes and is specialised on alternative educational forms, autonomous educational planning, dynamical encouragement concepts, IT supported education in all school subjects, first aid courses, integration classes, intercultural education, language weeks, a theatre group, mediation training, school partnerships, etc. The school disposes of a large garden suitable for biowaste garden composting:

The project day begins with an introduction in the composting processes, followed by a search for compost insects in the old compost box in the school yard:

After having collected as much insects as possible in the defined timeframe, the pupils identify them and learn about their living habits and space:

On 29th November 2004, the second biowaste garden composting day was held in the SPZ „Steinbrechergasse“, 22nd Viennese District. The project day progress and activities are identical with the initially held ones. The goal is to ensure the process continuity of the awareness building in the school. Photos are posted online on the project homepage.

8.4.1.2 Biowaste garden composting at the “Kleine Sperlgasse” school, Vienna

Contact:
Kleine Sperlgasse 2a, A-1020 Vienna
Phone: +43 1 216 61 83
Fax: +43 1 216 61 83-111
Web: http://www.schulen.wien.at/schulen/902051

The project partner school in the centre of Vienna is the Kleine Sperlgasse” School. The school is a public school of the City of Vienna (MA 56). The school form represents an elementary school of eight classes within a separate 1st and 2nd levels of education management. The school is located in the 2nd Viennese District, i.e. in an inner Viennese district. Additional services offered by the school include: IT supported education in all school subjects, individual special supervision, supporting measures for non-native German speaking children, intercultural education, supervision for legastheny affected children, school partnerships, etc. The school disposes of a small garden yet suitable for biowaste garden composting.
The project days follows the pattern of the SPZ “Steinbrechergasse” in all details.

8.4.1.3 Exchange excursion of the school of Sväty Jur to the “Molitorgasse” school in Vienna

Contact:
Molitorgasse 11, A-1110 Vienna
Phone: +43 1 749 17 07
Fax: +43 1 748 04 70
Web: http://www.schulen.wien.at/schulen/911061/

Since 1st September 2004, the school in Sväty Jur has begun to thoroughly separate the biowaste generated wihitn the school and to garden-compost it according to all technical requirements. An extra employee is trusted with the supervision of the process. All educational materials supplied by the Austrian project partners are posted online in the school intra- and internets.

On 15th October, a group of 25 pupils learning German and 3 teachers of the school of Sväty Jur visited a “colleague” class in Vienna at the “Molitorgasse” school. This UNICEF school is located in the 11th Viennese District and is a public school of the City of Vienna (MA 56). Special services offered by the school include: IT supported education in all school subjects, ecological education and garden composting, supporting measures for non-native German speaking children, English courses from the 1st class, integrative education, etc.

After a warm reception and an address of welcome by the Viennese school director, all pupils form groups changing in watching an educational Austrian video on waste separation and treatment and in playing waste separation games.

Afterwards, all visit the near compost:

In the early afternoon, the Slovak pupils visit the waste recycling centre Hainburg, where they are warmly welcomed by the manager of the Waste Union of Bruck an der Leitha, Mr. Raimund Holcik.

After the guided visit of the waste recycling centre, the guests receive a bio snack and a personal bag with compost.

The feedback of the school in Sväty Jur published in the school newspaper is attached in the Appendix. Both the publication and the own depiction of the exchange visit are available on the COMPASK project homepage and on the homepage of the school in Sväty Jur http://www.zsjur.sk/gal/rakusko/.

8.4.2 Biowaste garden composting in the kindergartens of Sväty Jur

The project was initiated in the two kindergartens in Sväty Jur on 12th November 2004. Both kindergartens merged their 3rd groups (children aged 5-6) in one of the kindergartens to learn the basics of waste separation with a special emphasis laid on biowaste and biowaste garden composting.

The activities began with the "Wilko compost worm" game. The puppet "Wilko worm" stays for the soil and compost worm and instructs the children how to "feed" him, i.e. to strictly separate biowaste and to put it onto the compost pile. "Wilko worm" is represented by Andrej Breziansky, author of the opinion poll of Sväty Jur and representative of the local NGO "Atelier" in the Steering Group on biowaste garden composting in the municipality (cr. 10.4).

The children act and learn with enthusiasm:

At the end of this activity, the newly gathered knowledge is checked by some key control questions, such as the favourite “food” and habitat of “Wilko worm” as well as the paths of the other waste fractions separated:

Afterwards the children get to know what compost is and observe the most popular insects that live there. The knowledge aims at building the attitude that biowaste is not “waste” but a very valuable good that turns into compost and soil:

In the last activity performed, the children look for compost insects in the kindergarten yard. With these, a 10 l - “worm jar” is assembled, in which neat layers of soil, compost, greenery, apple and orange peels are prepared. The children lay the found insects and worms into the “worm jar”. The latter will be kept dark, and several days later the children can observe that the layers are mixed up and begin to change, i.e. the compost insects perform their “work”.

The Austrian project partners hand to the teachers the colour maps used for the project in the schools as well as worksheets related to biowaste and garden composting, to be painted by the children. All “waste and biowaste games” are from now on an integral part of the educational process in both kindergartens, and will be performed every week by the teachers.

8.5 Initiation of a Participative Process in Sväty Jur on the Example of Biowaste Garden Composting: Establishment and Activity of the voluntary Steering Group on Biowaste Garden Composting in Sväty Jur

8.5.1 Overall Goal of the Steering Group

The initiation of a voluntary Steering Group on biowaste garden composting in Sväty Jur aims at:

- providing the municipality with a trained group of professionals holding relevant positions in the municipality and its society (schools, NGO, municipality), able to actively support the municipality if the latter considers biowaste garden composting a key option for the biowaste management in Sväty Jur,
- providing the citizens of the municipality with the possibility to play an active role in the municipal decisions in the field of (bio)waste management and to accelerate processes that allow for sustainable biowaste management (e.g. biowaste garden composting),
- raising long-term public awareness towards biowaste garden composting (e.g. social events performed by the local NGO).

<u>The fact that citizens of a former socialist municipality have willingly agreed both to take part on a voluntary base and to utter their civil position in a dialog with the municipality counts to the major achievements of this project.</u>

For achieving a deeper and transparent insight into the forming and the activity of the Steering Group, summaries of all meetings of the Steering Group and the combined meetings with the municipal administration are presented below.

8.5.2 Members of the Steering Group

The members have all taken part in the COMPASK know-how transfer in 2003. They are representatives of educational and municipal entities in the town and participate on a voluntary basis.

Andrej Breziansky (local NGO “Atelier”)
Vierka Pavelekova (teacher at the school in Pezinok)
Lea Mrafkova (motivated citizen of Sväty Jur, environmental engineer)
Eva Mrafkova (teacher at the school in Sväty Jur)
Temo Mtibelashvili (AINOVA, Slovak Project coordinator)

The municipality is reported to seemingly be not willing to participate on a voluntary basis in the meetings of the steering group, for reasons of working time, respectively, payment. Thus, no representative of the municipality will be a member of the steering group.

8.5.3 First Meeting of the Steering Group

The goal of the first meeting held on 30th April 2004 in Sväty Jur was to coordinate together with the Austrian project partners the prospective common actions towards enhancing the biowaste garden composting in the municipality.

At both schools (Sväty Jur and Pezinok), garden waste has always been garden-composted. Elder people in the municipality and in the entire Pezinok district have, too, always garden-composted their biowaste, being part of the agricultural practice in the region.
The problem is presented by the group of those young people of Sväty Jur who go to school in other municipalities (e.g. Bratislava), so that they hardly know biowaste garden composting and thus consider it “useless work”.
This attitude has been considerably developed also under the knowledge that with or without waste separation, all waste is anyway landfilled (and thus “out of sight”).

The Steering Group summarises the most suitable approach responding to the main obstacles:
- more information on the EU Landfill Directive (necessity of (bio)waste separation) need to be spread in the municipality
- special emphasis on the financial aspect (i.e. centralised composting does cost, garden composting does not) should be set more clearly within the municipality, so that public awareness could be raised more effectively.

In addition to the school cooperation to start, the local NGO “Atelier” is very willing to remain involved in the subject of popularising the biowaste garden composting, along with waste separation and recycling. The local newspaper and the local cable TV should be involved as well in information campaigns for the citizens.

8.5.4 Measures suggested by the Steering Group towards enhancing the biowaste garden composting in Sväty Jur:

At its first meeting, the Steering Group suggested the following measures for successful enhancement of the biowaste garden composting in the town:

- School cooperation with the Austrian partner schools
- Cooperation with the “Atelier” NGO
- Information materials spread in the municipality
- Information for the population via local newspaper, cable TV and “street radio”
- Waste separation at school and composting <u>in classes</u>
- Support and promotion for garden composting by selling compost boxes
- Targeted information on composting
- Winning over as many as possible teachers for the project
- Involving gardeners into the project; self-control and monitoring
- Involving cleaning staff (at schools and in other public buildings)

- Motivation for children at school by boards and pictures (graphic material)

8.5.5 Second Meeting of the Steering Group:

At its second meeting held on 18th May 2004, the basic know how on PR work in municipalities was transferred to the Steering Group, and details on possible PR activities in Sväty Jur were discussed.

In the second part of the meeting, the Viennese school project as well as the materials employed by the Austrian teachers were presented and discussed.

In the last part of the meeting, the Steering Group specified the measures defined by the first meeting and, based on them, developed an action plan for the successful enhancement of the biowaste garden composting in the town.

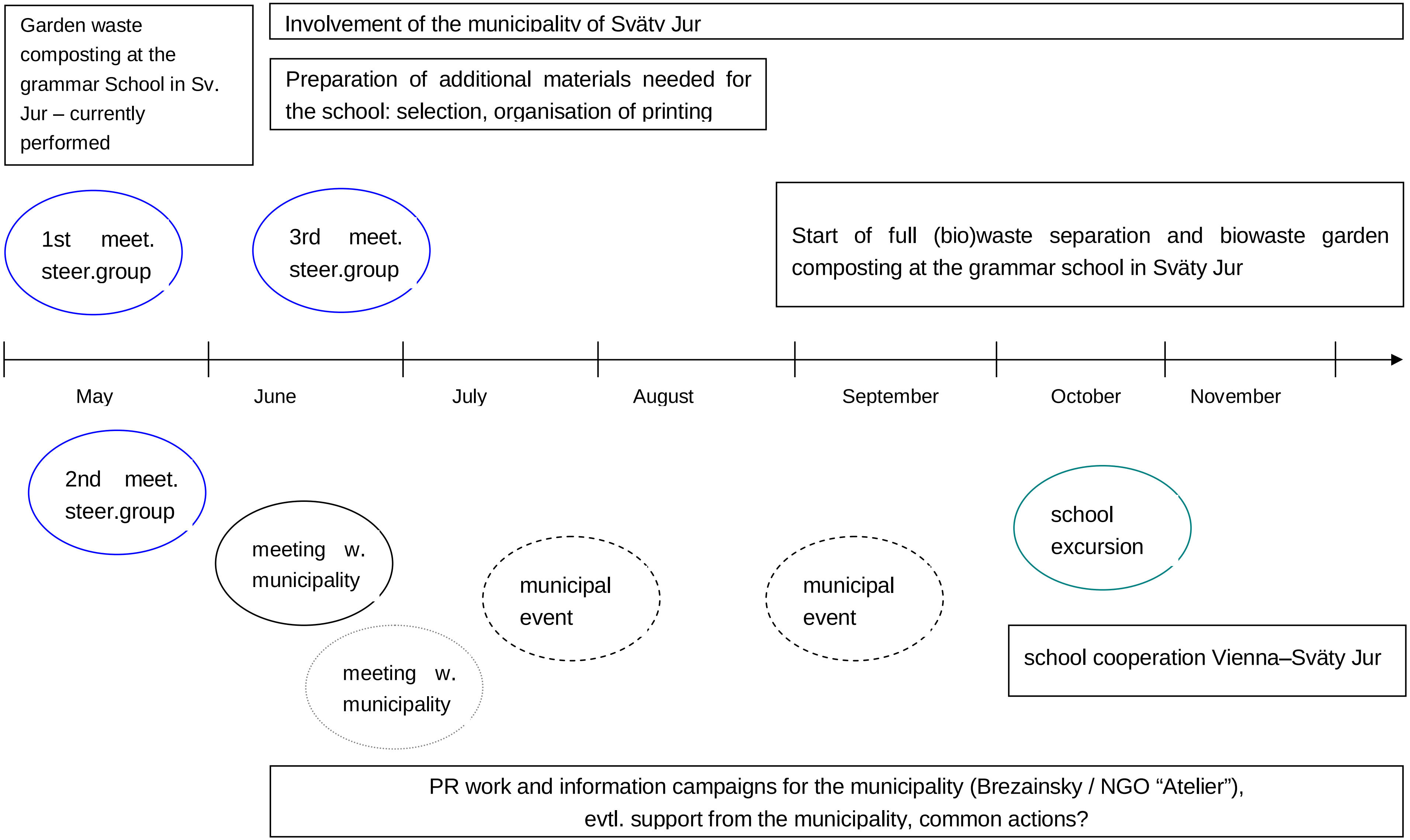
8.5.6 Action Plan of the Steering Group for Enhanced Establishment of the Garden Composting in Sväty Jur:

The main elements of the action plan are:

- biowaste garden composting at the school in Sväty Jur (teacher – member of the Steering Group)
- school cooperation with the Viennese schools (Austrian project manager and partners, School in SVäty Jur)
- information campaigns (ongoing and at municipal feasts) for the citizens of Sväty Jur (representative of the local NGO – member of the Steering Group, evtl. cooperation with the municipal administration)
- cooperation with the municipality (Austrian project manager, local NGO, Steering Group).

The initially planned municipal events have not accounted for the fact that the municipal administration will not be prepared before January – February 2005 with suggested new waste fees.

ACTION PLAN TOWARDS ENHANCED ESTABLISHMENT OF THE BIOWASTE GARDEN COMPOSTING IN SVÄTY JUR



Garden waste has always been garden-composted at the grammar school in Sväty Jur, under the supervision of the teacher – member of the Steering Group. After a meeting with the director of her school the previous week, she had enabled the decision that starting September 2004, the school will begin to thorough separate all biowaste within the school and garden-compost it according to all technical requirements. An extra employee will be trusted with the supervision of the process. The suggestion of teacher thus referring to the cooperation with Vienna is that the exchange excursion to the Viennese schools takes place not before October 2004, so that there would be already some reasonable base for it. The participants should be the class of pupils who take German as a foreign language. To her opinion, the crucial factor will be to convince as more citizens as possible to follow their example. Concluding, she points out that she would need some educational materials for both her pupils and for adults.

The representative of the local NGO "Atelier" and the Austrian project consultant will prepare the materials. If additional funding for printing is needed, the Slovak Environmental Ministry, Dept. Waste and Biowaste Management could provide a small financial aid (cr. Minutes Envir Ministry SK 04-12-03.doc). A teacher – member of the Steering Group suggests to also contact the Methodical Centre for Teaching that in Bratislava, in order to eventually obtain additional materials on garden composting could be available. The Steering Group considers the necessity of the accompanying own information campaigns on garden biowaste composting (local TV, newspaper and radio) to be coordinated with eventual related actions by the municipality.

The members of the Steering Group emphasise on the necessity to take an active role towards the municipal administration, e.g. beginning with a meeting with all responsible officers for waste management in Sväty Jur and with the mayor at once, so to avoid further shifting of responsibilities among them. The goal of such a meeting would be to ask for their concrete support and harmonisation between the municipal (bio)waste management policy and the COMPASK Project. The meeting should be held in the first week of June. The participants of the meeting list the following issues to be discussed at the meeting with the municipal administration:

<u>The steering group offers the municipality:</u>
A list of concrete actions (action plan as above) towards establishment of the garden composting in the municipality, as suggested by the steering group.

<u>The steering group requires from the municipality:</u>
- a fee system favouring biowaste garden composting in Sväty Jur, or at least information on the time such a system will be introduced (since 1st May 2004, the municipality is to meet the EU Landfill Directive), so to coordinate common activities;
- organisation of a chaff cutter service, and
- harmonised campaigns between the municipal administration and the Steering Group for PR work in Sväty Jur.

The Steering Group discusses the necessity of involving the local composting enterprise INTERSAD (cr. Email from Mtibelashvili, 25th March 2004) as well, being also a member of the municipal council. Although it would be preferable to involve all key players in the municipality, the risk could not be avoided that INTERSAD may like to collect themselves all biowaste and thus be contra productive to the project goals. The participants consider that the decision of the citizens to whether garden compost themselves or to opt for a central biowaste collection will be their own. The Steering Group can, among else, convince them in the benefits of garden composting, but not to take off their decision. For this reason, it is decided to not generally exclude INTERSAD, especially when they are a member of the municipal council. However, for a first meeting with the municipality, their presence will not be needed.

8.5.7 Third Meeting of the Steering Group

As decided at the second meeting, the third meeting (Tuesday, 22nd June 2004) is held immediately after the meeting of the Austrian and the Slovak project managers with the two key representatives of the municipal administration, the waste management officer and the environmental officer.

At the meeting with the municipal officers, the Austrian and the Slovak project managers inform the municipal officers on the latest developments of the COMPASK project, with emphasis on the action plan developed by the Steering Group, and point out the necessity of well coordinated actions between the project and the municipality, now that after 1st May 2004 the Landfill Directive is effective in Slovakia as well. The Austrian project manager asks for information on the planned action by the municipality, in particular on the timetable of changing the (bio)waste fees in favour of (bio)waste separation.

The two municipal officers inform that currently, the main task of the municipality is to enable a qualified analysis of the waste and financial flows as well as to develop cost and disposal scenarios for the (bio)waste management of the municipality. First estimates are expected not before October 2004. Generally, biowaste (especially when originating from the residential blocks) will be collected and composted on a site at the outskirts of Sväty Jur, by the local company INTERSAD. The Austrian project manager presents the Austrian pattern of both options, centralised and garden composting, co-existing in the municipalities and thus presenting an alternative for a choice of the citizens. So even in case of an established system on centralised composting in Sväty Jur, there are synergies with the COMPASK project possible. Both officers warmly welcome the idea of a cooperation between the COMPASK project and the municipal activities and ask the Steering group to meet them in September 2004.

At the following meeting with the Steering Group, the Austrian and the Slovak project managers inform on the results of the discussion with the municipal administration in the morning. All participants of the Steering Group welcome the idea for a common meeting with the municipality in the beginning of September 2004. At the same time, all information and education materials available in electronic form are already distributed in the municipality (administration, school, AINOVA, NGO). In the school, they are already set online in the school intranet.

The representative of the local NGO "Atelier" reports that – considering the summer vacation beginning on 1st July – the kindergarten project can start no earlier than in the autumn. He further informs on the contact with the Slovak Environmental Ministry regarding the subject of financial aid for printing the informational materials (leaflets) for the PR work in Sväty Jur: an official proposal should be submitted to the ministry, its evaluation would take 4-6 weeks. In July and August AINOVA will be in charge of this proposal submission.

8.5.8 Fourth Meeting of the Steering Group

The 4th meeting of the Steering Group was held on the 13th September 2004 and was a combined meeting of the Steering Group and the municipality of Sväty Jur. This is the first meeting held without any participation of Austrian project partners. The meeting is organised and moderated by the Slovak project partner AINOVA.

The municipal environmental officer underscores that after a positive contact with the environmental NGO ''Friends of the Earth'' in Kosice, all materials for PR work in the municipality will be supplied by "Friends of the Earth". Thus, there will be no need of translation and print of the Austrian leaflets. The municipal environmental officer reports on his intention to also publish an article about benefits of composting in the local newspaper. He further emphasises that the PR work must be done in autumn since it is the season when most of the garden waste is generated.

A Steering Group member states that there are enough materials about composting already available in Slovak language and there is no actual need in making translations from German. These materials are mainly produced by environmental NGOs "'Friends of the Earth'', DAPHNE and ''Zivica'' and could be easily obtained from them.

In the second step of the meeting, the issue of the data on the waste generation and waste analyses is discussed. In terms of biowaste management, the municipal waste management officer points out that that there must be a financial motivation manifested through waste fees as a key factor. The municipal environmental officer informs that no reasonable waste fee can be estimated without knowledge of the real waste amounts generated in Sväty Jur. He suggests narrowing down the focus on a so-called "pilot street" (cr. 10.5.9). This experience would also enable the municipality to select the most effective financial mechanisms that could be afterwards discussed on Town Council level.

In the third step of the meeting agenda, the municipality presents the ideas on the planned structure of the PR work in Sväty Jur and the prospective integration of the school in this process. All participants stress the importance of actively involving the local mass media. The municipal environmental officer will display announcements on information boards throughout the town. The structure and the contents of the PR campaign will be elaborated together with the Austrian project manager and the Slovak expert at the next meeting. The Slovak project manager stresses that for multiplication of effects the activities referring to the pilot street, the school and kindergartens must launch and run simultaneously. The representative of the local NGO will prepare the start of the project in the two local kindergartens, foreseen for the beginning of November 2004.

8.5.9 Fifth Meeting of the Steering Group

The fifth meeting of the Steering Group and the municipal officers is held on Monday, 20th September 2004.

First, the Slovak expert presents the Implementation Plan developed by her within the COMPASK project. As a key conclusion she outlines the necessity of reliable data (as a base for new structuring of the waste fees in Sväty Jur). The Slovak expert demonstrates that the municipal waste generation numbers for Sväty Jur differ significantly from the ones for Slovakia and the district Pezinok where Sväty Jur is located, i.e. she has been forced to re-calculate them herself.

Second, she points out the importance of a cooperation with a waste disposal company who, on the contrary to PETMAS who currently performs waste collection and disposal, would be interested in a neat waste separation and will be able to guarantee it. It should be thus a recycling company, and not simply a disposal enterprise as PETMAS is.

Third, she underlines that without adjusted waste fees who would offer a financial incentive for the citizens in the municipality to separate their waste and to garden-compost it, no sustainable waste management is possible to establish.

The municipal environmental officer agrees and presents a summary of the problems he and his colleague, the municipal waste management officer, are to face in terms of the municipal waste management:

- <u>there is severe lack of control</u>: nobody can control and thus effect on the activities (waste separation, recycling) of the local waste collecting company PETMAS who is a private company. Due to the lack of structures such as the waste management unions in Austria, the private sector in the Slovak waste management undergoes no control and is not obliged to reliable reporting.

- again, <u>due to PETMAS, no reliable data on the true amounts of generated waste in the municipality can be gained</u>: PETMAS collects all the waste of the municipality, which is not separated, and returns to the municipal office a sheet with data of the separate waste fractions. However, nobody can check the plausibility of these data, and the municipality cannot be involved in the waste fractions cross-check. Moreover, data on biowaste lack completely. Thus, the municipal administration cannot have information on the rue waste generation in Sväty Jur, and thus to calculate a waste fee structure. And PETMAS is not interested in collecting separated waste.

- <u>the contract with PETMAS has been signed by the mayor of Sväty Jur</u>. A change or cancellation of the contract is thus a difficult issue, and Sadlon will discuss with the mayor what possibilities are available at all for this.

For all these reasons, the municipality sees as an only option to get reliable data, and that sooner, the establishment of a “pilot street” in Sväty Jur:
The municipal waste management and the environmental officers plan to initiate an action of full waste separation on one street of Sväty Jur. The street should be built-up by one-family-houses, so to gain data on the household waste generation. Since currently no financial incentives for these citizens can be offered, their participation can be only on a voluntary basis. The latter will be quite a challenge. The separated waste will be transported by the old municipal truck. Currently is however not clear to whom the separated waste will be then purchased.

The municipality has already organised PR materials in Slovak by the “Friends of the Earth” in Kosice. However, a significant contribution by the Austrian partners could be the performance of a “compost party”, so that the inhabitants of the “pilot street” could learn the basics of correct biowaste garden composting. Although the Austrian partners can perform this demonstration, it should be held no later than in November 2004, since the project activities end practically by the end of November. After the project end this will not be possible. So an eventual initiative for demonstrating a “compost party” in the next weeks should originate from the municipality of Sväty Jur.

Further, the participants discuss details of the PR campaign in Sväty Jur. The pioneer example of the school of Sväty Jur and the kindergartens should be firmly incorporated into any PR measures in the town. Apparently the PR campaign will be only for the “pilot street”, since there will be no point in a large campaign prior to having a clear message to the citizens, i.e. a decision on the waste fees and on the future disposal pattern/company. Both will be clarified, respectively, take place after December 2004. This way, no PR campaign and further public actions for Sväty Jur within the COMPASK project are foreseen.

The Members of the Steering Group and the Austrian project manager plan the exchange “compost excursion” for the school in Sväty Jur in Austria. The excursion will take place on the 15th October 2004.

In the meantime, the representative of the local NGO “Atelier” will prepare the “biowaste garden composting day” for the two kindergartens in Sväty Jur, that should take place on the 12th November 2004. The programme and the materials needed will be organised by the Austrian project partners.

8.5.10 Sixth Meeting of the Steering Group

The sixth meeting of the Steering Group is, again, a combined meeting between the members of the Steering Group and the municipal environmental and waste management officers, without Austrian partners raking part. It is held in the beginning of December 2004 and aims at drafting the common future cooperation between the Steering Group and the municipal administration after the administrative project conclusion. The results of the meeting are presented in Chapter 11 Activities in Sväty Jur after the Project Conclusion.

8.6 Project PR Activities

A graphic overview over all project activities is presented in Chapter 11.

8.6.1 COMPASK Online

Since project begin, the project progress and all activities have been registered on the project homepage in German http://www.oegut.at/themen/moe/compask.html and English http://www.oegut.at/themen/moe/compask_e.html. The key characteristics of the project is that it is not based on technical equipment but on PR work with the citizens, addressing as many as possible social groups. This specific feature is considered in the project homepage design, layout and structure.

8.6.2 Project Presentation at the Inter-ministerial Event Austria – Slovakia "Erweiterte Umwelt" ("Enlarged Environment")

On 25th November 2003, the environmental ministers of Austria and Slovakia discussed in public the subject of environmental protection in both neighbour countries within the EU enlargement. Two projects were invited for a presentation as well, one of which being the COMPASK project. Press summaries ("Der Standrard", "Forum") are available (German) under
http://www.oegut.at/publikationen/pdf/compask_erw_umwelt_zusammenf_251103.pdf
http://www.oegut.at/publikationen/pdf/compask_erw_umwelt_standard_271103.pdf
http://www.oegut.at/publikationen/pdf/compask_erw_umwelt_forum.pdf

8.6.3 Project Presentation at the Slovak Ministry of Environment

In December 2003, the project was presented at the Waste Management Department of the Slovak Ministry of Environment. The Head of the Biowaste Management Group, Dr. Fratricova, expressed her approval of the practice-oriented core of the project and of its main advantage of offering a cost-effective, low-technology alternative for biowaste management on municipal level.

8.6.4 Project Presentation at the Biowaste Seminar in Zilina

In January 2004, the COMPASK project was presented at the Biowaste Seminar in Zilina (Slovakia) (http://english.biom.cz/), within an EU framework project on biowaste management. The emphasis was set on the theoretical base and the logistics of biowaste management in Europa. On this background, the COMPASK project gained special attention with its intermediate and practical approach.

8.6.5 Project Presentation at the Biowaste and Composting in St. Pölten

In March 2004, the COMPASK project was presented at the Biowaste and Composting Seminar in St. Pölten (Lower Austria), within an bilateral action between the Province of Lower Austria and Slowakia (http://www.noe.gv.at/service/RU/RU3/Abfallneu.htm). The focus was set on the theoretical base applied within the EU and on the practical biowaste management in Lower Austria, Vienna and Slovakia. Among the project presented by both countries, the COMPASK project enjoyed a positive feedback with its practice-oriented approach.

8.6.6 Project publication in the "Waste Management World" Magazine

The publication was published in the September/October 2004 issue of the magazine and is attached in the Appendix. The paper is available also online on the project homepage.

8.6.7 Project press releases

The first project press release (Province of Lower Austria – ÖGUT) was disseminated in October 2004, and is attached in the Appendix. The text is available also online on the project homepage.

The second press release (City of Vienna MA 48 – ÖGUT) was disseminated in the beginning of 2005, and is attached in the Appendix. The text is available also online on the project homepage.

8.6.8 Project publication in the "APA online Journal Oktober 2004"

The publication was published in the October 2004 issue of the magazine and is attached in the Appendix. The paper is available also online on the project homepage.

9 Results

The key results of the COMPASK project are:

1. Cross-border cooperation
The initially planned project activities and thus results have not been possible to achieve in their full range due to the twinning PHARE project having been rejected three consecutive times. The reasons for the latter do not appear plausible (cr. Chapter 3). However, the project consortium has developed the project as closely to the initial work plan as the circumstances have allowed for, and has enriched it by additional activities of a positive long-term effect in the field of awareness raising and public participation.

2. Know how transfer Austria - Slovakia
A successful transfer of Austrian know how to the pilot municipality Sväty Jur in Slovakia has been performed, consisting of:
- supplying the pilot Slovak municipality with the basic knowledge needed for a sustainable biowaste management, and
- proving the advantage of biowaste garden composting compared to other treatment options.

3. Biowaste management in the pilot region: City of Vienna, Province of Lower Austria, Slovakia, District Pezinok, pilot Slovak municipality of Sväty Jur
Analyses of the biowaste management in the City of Vienna, the Province of Lower Austria, Slovakia, District Pezinok and the pilot Slovak municipality of Sväty Jur have been performed. The analyses have served:
- The possibilities for adjusting the Austrian experience and biowaste management strategies onto the pilot Slovak municipality.
- The elaboration of the Implementation Plan for establishing the biowaste garden composting in the municipality. It has been developed in a way that allows for its use both within the current project (under the assumption that the PHARE twinning project would have been approved) or by the municipal administration within their own activities after this project conclusion.

4. Public attitude in Sväty Jur towards biowaste garden composting
A large share of the households in Sväty Jur already perform biowaste garden composting. According to the opinion poll, 33% of the households compost their garden biowaste, and further 28% compost both their garden and kitchen biowaste. Only 5% consider it useless work. The rest have no conditions for biowaste garden composting.
The population of the municipality of Sväty Jur proves, in general, a positive attitude towards the biowaste garden composting: 62% of the households would bring their biowaste to common biowaste composters in Sväty Jur, 55% would practise, respectively go on practising, biowaste garden composting if there were a financial incentive (waste fee reduction), and 79% - if the waste fee were adjusted to the waste amount generated.
However, there is lack of own initiative among the citizens and of motivation for positive changes in the waste management. 62% of the households expect the municipality to play the lead role if changes in their waste behaviour are required. A financial incentive (e.g.

waste fee reduction) appears the key factor for the citizens to willingly practise garden composting for their household biowaste.
Only single citizens show an active civil position and an own initiative for action. Within the project, these have been organised in a voluntary Steering Group one of whose functions has also been a dialog with the municipal administration by active participation and steering of the decision-making processes in the municipal waste management. (cr. paragraph 10.1 below)

5. Separate waste collection in Svätý Jur

Separate waste collection has been already introduced in Svätý Jur, however only for the fractions of glass, paper and metal scrap. PET bottles and paper are collected together and separated manually just prior to their disposal. Biowaste is not separately collected, but in a mixture with the residual waste.

6. Biowaste generation in Sväty Jur

Currently, the waste collection and disposal in in the Pezinok District is fully privatised and performed by a monopolist private company. The company collects the entire waste and separates it afterwards. The waste collection and disposal companies are obliged to return to their clients, the municipalities, information on the waste fractions in their municipal waste. The results in Sväty Jur prove, however, the unreliability of the data gathered this way: biowaste data lack completely. The biowaste generation for Sväty Jur has thus been calculated. Since in 2002 a new waste catalogue was adopted in Slovakia, two biowaste average values are calculated: for the period 1999-2001 and for 2002. For the calculation, the percentage of the biowaste fraction in the municipal waste in the Slovak Republic is used (38% of the municipal waste, Waste Management Plan of the Slovak Republic until 2005). The average biowaste generation in Sväty Jur is thus ca. 364,33 t or 78,33 kg/cap*a for 1999-2001, and ca. 481 t or 107,6 kg / cap*a in 2002, all disposed of by landfilling.

The lack of knowledge of the real waste amounts (in fractions) generated in the municipality is supported mainly by the fact that there are no (state) structures on local or regional level who would have a control function over the private waste collection and disposal companies and, respectively, over the quality of waste separation by the latter.
In addition, the contract between the municipality and the waste collection and disposal company is currently not subject to alteration or cancellation. The municipal administration yet expects that negotiations on highest administrative level, i.e. mayor, in near future could result in certain changes in the contract.

7. Waste fees in Sväty Jur

Waste fees in Sväty Jur are paid per capita, and not per mass of generated waste. The emptying intervals are no subject to change and thus do not consider the filling grade of the household waste containers. The current waste fees cover only waste collection (8,4 Euro/cap*a in 2002; 9,9 Euro/cap*a in 2003). Waste treatment is financed by the municipality (37,6 Euro/t*a in 2002) and is executed by the waste disposal private company. The fee establishment is based on the data sheet issued by the collection and disposal company and, as shown above, cannot be considered realistic.

8. Biowaste treatment in Sväty Jur

The biowaste from Sväty Jur collected by the waste disposal company is landfilled. In the next years, the local agriculture cooperative intends to collect and compost the biowaste from Sväty Jur in a nearby small-scale composting plant. Currently (2004), the site which is to serve as a composting plant is being prepared. There is no specific information on the timetable, nor on the contract modalities among the municipality, the current waste disposal company and the agricultural cooperative in Sväty Jur.

9. Implementation Plan for establishment of the biowaste garden composting in Sväty Jur

The Implementation Plan has been developed by the Slovak project consultant and consists of a waste management analysis for Slovakia, the Pezinok District and Sväty Jur; waste fee analysis for Sväty Jur and an Implementation Concept. The document is attached in the Appendix. The main outcome are the identification of the key problems of the biowaste management in Sväty Jur (lack of reliable data; unreasonable waste fees) and a basic concept (activities and timetable) for the Steering Group and the municipal administration how to introduce the biowaste garden composting on municipal level.

10. Initiation of public participation and awareness raising processes in Sväty Jur

The initiation of these two processes in the pilot Slovak municipality presents the core of the project and its key achievements.

10.1. Initiation of public participation processes in Sväty Jur: Steering Group on garden composting

In the end of April 2004, a voluntary Steering Group on Biowaste Garden Composting was founded in Sväty Jur. Within the five common meetings (April – September 2004), the following has been achieved:

- Training:
    - The Implementation Concept and the results of the opinion poll have been studied.
    - The Austrian school projects have been studied.
    - The basics of PR work in the field of municipal waste management has been transferred to the members of the Steering Group.
- Activity:
    - an own Action Plan for further activities has been developed.
    - The municipal administration has been integrated into the project.
    - The Steering Group has begun to actively take part in the decision-making process on how the municipality should further develop the (bio)waste management.

10.2. Awareness raising: Initiation of school and kindergarten projects and cooperation

- School projects:

Biowaste garden composting has been introduced successfully at two schools in Vienna and in the school in Sväty Jur. The school in Sväty Jur has voluntarily begun to not only garden compost its biowaste, but also to perform a full-scale waste separation according to the Austrian practice. The project as well the training of the pupils is coordinated by the teacher who is a member of the Steering Group, supported by a special employee of the school. All training materials have been translated into Slovak and handed over to the municipal administration, the local school and the local kindergarten as well as to the Steering Group. The electronic version has been set online in the school intranet, so every teacher or pupil has free access to the information. The initial phase ended with a school exchange visit in Vienna.

- Kindergarten projects:
In the autumn of 2004, awareness raising activities in the field of biowaste management were initiated in the two kindergartens in Sväty Jur. The children are trained in the basics of waste separation and biowaste composting in a playful manner, so that the idea has been conveyed to them that biowaste is a valuable good and not “waste”. Also, the parallel implementation of the project in the kindergartens and in the school allow for securing a continuous awareness building process among the young people in Sväty Jur.

<u>11. Publicity</u>
The COMPASK project has gained a worldwide positive image among experts and interested public with its practical orientation, original approach, simple technology and the municipality being the target group. Along with the project homepage, a number of national and international project presentations and publications have been realised.

10 Conclusions

The current project allows for the following conclusions to be drawn:

1. Cross-border cooperation

The lack of coordination within the PHARE office in Slovakia and of correspondence between PHARE and INTERREG have had a highly negative impact on the entire project. The resulting need of narrowing some project activities has reduced the initially planned range of the project. The project consortium has, however, introduced additional project activities, so to ensure a project outcome comparable to the planned one, and in a certain view, even a more efficient one. So for instance the initiation of two social processes within the biowaste management in Sväty Jur allows for a positive long-term effect in both public participation development by means of the voluntary Steering Group on garden composting and of awareness raising among the young citizens in this field. Without this base, a technical measure alone (e.g. distribution of garden compost boxes) would have lacked durable success.

2. Know how transfer Austria - Slovakia

The urban and economic structure of the pilot municipality of Sväty Jur is highly advantageous in terms of introducing the biowaste garden composting, respectively, of introducing the biowaste management structure of Lower Austria, offering the choice between biowaste garden composting as an option of treating household and garden biowaste at its origin, and the use of a biobin, whose contents are mostly treated in small-scale decentralised agricultural composting plants.

3. Biowaste management in the pilot region: City of Vienna, Province of Lower Austria, Slovakia, District Pezinok, pilot Slovak municipality of Sväty Jur

The biowaste management strategy of the Province of Lower Austria offers examples well applicable in the pilot municipality of Sväty Jur, which is a small town with an economic and urban structure as e.g. in the District of Bruck an der Leitha in Lower Austria.

However, the Austrian experience is not fully transferable onto the pilot Slovak municipality, since in the entire district Pezinok, the (bio)waste collection and disposal are completely privatised and managed by a monopolist private company. The problem is that in the same time, controlling structures lack, such as the Austrian waste management unions. This results in the negative effects of uncontrollable quality of the waste separation and disposal as well as in unreasonable waste fees (cr. paragraph 7. below).

4. Public attitude in Sväty Jur towards biowaste garden composting

There has been a need of a “driving force” in the municipality, so that a sustainable behaviour model within the municipal biowaste management is followed by the citizens. This need has been responded to by building the voluntary Steering Group on garden composting in Sväty Jur, whose role includes also participation in the decision-making processes related to the municipal biowaste management.

Since the members of the Steering Group are aged between 20 and 55, the success of their integration on voluntary basis shows also that despite the negative experience with "voluntary" activities in the past of a post-socialist country like Slovakia, participative processes find a very fruitful base for their further development. (cr. paragraph 10.1 below).

5. Separate waste collection in Svätý Jur

and

6. Biowaste generation in Sväty Jur

One of the key problems in the Slovak waste management is the phenomenon of "too much privatisation and too little control". There is a clear need of structures such as the waste unions in Austria, who are authorised to both establish waste fees and to control the activity of the private waste collection and disposal companies in terms of quality and waste management standards.

7. Waste fees in Sväty Jur

Without exact knowledge of the waste and waste fractions generated in the municipality, no reasonable and cost-effective waste fees are possible to calculate. A consequence of this is also that the current waste fee system in Sväty Jur does not establish a connection between the amount of waste generation in the houshold and costs for the citizens. It so contradicts the principles of a sustainable waste management, and measures towards resource saving, waste material recovery and waste prevention are thus difficult to introduce.

If the progress towards a sustainable management is desired, the first step should be an adjusted and reasonable waste fee system, supporting also waste reduction and recycling at the source of origin (e.g. biowaste garden composting).

8. Biowaste treatment in Sväty Jur

Introducing the system of two options for biowaste composting, i.e. garden composting and biobin collection with following composting at a small-scale plant nearby, appears a reasonable solution to ensure the environmentally friendly biowaste management for the households who do not have a possibility to practise biowaste garden composting. This system however can induce a positive effect only if the waste fee system allows financial savings for the households having opted for biowaste garden composting.

9. Implementation Plan for establishment of the biowaste garden composting in Sväty Jur

The Implementation Plan has allowed for identification of the main problems of the (bio)waste management in Sväty Jur. At the same time, it has delivered the first data on biowaste generation in Sväty Jur. Finally, the Implementation Plan offers also an

Implementation Concept inevitable for the future work of the municipal administration within the biowaste management by scheduling all necessary work steps and activities for the establishment of the biowaste (garden) composting in Sväty Jur.

10. Initiation of public participation and awareness raising processes in Sväty Jur

10.1. Initiation of public participation processes in Sväty Jur: Steering Group on garden composting

Planning for the future requires the active engagement of all parties and stakeholders (administration, politics, academia, citizens and NGOs) as a fundament for sustainable and effective planning. While administration, politicians and academia have secured their position in the decision making process, it is the citizens and the civic society organisations that are usually left behind. The usual argument for this situation is the continuous lack of resources and the complicated nature of engaging “laymen” in the planning and decision making process. The result is often one-sided policies which do not integrate the interest of the citizens and are thus either contra-productive or only formally implemented.

The launch of a participative process in Sväty Jur in the field of the biowaste management has induced initiative also in the municipal administration. The activity of the municipal administration has been accelerated, and concrete solutions for further action has been found. This proves once again the crucial role of public participation in the decision-making processes, especially when the interests of the citizens are considered. The long-term effect of the participation process ensures also the stable and sustainable implementation of the municipal policies.

10.2. Awareness raising: initiation of school and kindergarten projects and cooperation

The participation process launched among the elder generation in Sväty Jur has been complemented by an awareness raising process among the young generation. This coupling of two social processes and of more generations in the same time guarantees positive effects over longer periods of time and in wider social circles. In addition, this allows also a greater effectiveness in terms of time management, since the sustainable behaviour models the children have adopted now will not be necessary to get to know as adults.

The school and kindergarten projects have enjoyed a great success and have proved that the younger generations in Sväty Jur are open and willing for sound environmental behaviour. Also, the initiated school cooperation between the Austrian and the Slovak pilot regions contributes to the strengthening of future regional relations and contacts.

11 Activities in Sväty Jur after the Project Conclusion

The key problem identified in Sväty Jur within the (bio)waste management is the lack of (reliable) biowaste and waste data. This situation is well supported by the fact that systems for control over the private waste disposal companies completely lack.

Thus, the municipal environmental officer of Sväty Jur (assumption of office in March 2004), together with the Steering Group on biowaste garden composting, will establish in the spring 2005 a „pilot street” in Sväty Jur. This will be a short street with a single house structure where the citizens will – on a voluntary base again – separate their waste over a longer time period. This way, reliable data on the waste fractions and mass generated in Sväty Jur can be gathered, and based on them, new waste fees can be calculated and introduced in the municipality. The fees will allow for financial benefits for those households who opt for biowaste garden composting instead for the biowaste bin and the centralised biowaste composting. The latter will be performed by the agriculture cooperative in the outskirts of Sväty Jur. The introduction of the new fees and of the two optional biowaste treatment systems (garden and centralised composting) will be accompanied by PR and information campaigns in the municipality. Within these, the municipal administration will advertise the multiplicator's role of the school, of the kindergartens and of the local NGO „Atelier“, so to demonstrate the ongoing activities of biowaste garden composting there as an example to follow.

In the same time, negotiations towards alteration of the existing contract with the current private waste disposal company are pursued. The goal will be to ensure separate waste collection and reliable data. Crucial for the positive outcome of this process would be the establishment of state controlling structures, such as the Austrian waste management unions.

The entire preparatory process, i.e. the period until the introduction of the new biowaste management system, including also the new waste fees, can be expected to be completed at earliest in the spring 2005.