

Table of contents

TABLE OF CONTENTS	i
TABLE OF ILLUSTRATIONS	iii
FOREWORD.....	iv
INTRODUCTION.....	vi
1. WHY WORRY ABOUT THE MANAGEMENT OF BIODEGRADABLE HOUSEHOLD WASTE ?.....	1
1.1. INTRODUCTION	2
1.2. COUNCIL DIRECTIVE 1999/31/EC ON THE LANDFILLING OF WASTE	3
1.2.1. Objectives and content	3
1.2.2. Assessment	4
1.3. OPPORTUNITIES TO ADDRESS ENVIRONMENTAL CONCERNS	5
1.3.1. The sustainable management of soils	5
1.3.2. Energy issues and climate change	6
1.4. OPPORTUNITIES FOR ECONOMICALLY OPTIMISING MUNICIPAL WASTE MANAGEMENT	7
2. THE HOUSEHOLD BIOWASTE FRACTION	8
2.1. PROPORTION	9
2.2. GEOGRAPHICAL FEATURES	10
2.3. COMPOSITION.....	11
2.3.1. Food waste	12
2.3.2. Garden waste.....	12
2.3.3. Some specific biowaste flows	12
3. MAIN OPTIONS FOR THE BIOLOGICAL TREATMENT OF HOUSEHOLD BIOWASTE	14
3.1. COMPOSTING.....	15
3.1.1. Principles	15
3.1.2. Which technology to choose?	16
3.2. ANAEROBIC DIGESTION	18
3.2.1. Definition and Principles	18
3.2.2. Some parameters of the process.....	18
3.2.3. Anaerobic digestion : for which purposes ?	19
3.2.4. Pre-treatment requirements	19
3.2.5. The products of anaerobic digestion	21
3.3. AEROBIC OR ANAEROBIC?.....	23
3.3.1. Types of waste to be treated	23
3.3.2. Local environmental conditions.....	23
3.4. RELEVANCE OF THE USE OF BIOMECHANICAL TREATMENT ON THE RESIDUAL FRACTION	24
3.4.1. Stabilisation of residual biowaste prior to landfill	24
3.4.2. Weight and volume reduction.....	25
3.4.3. Increase of the calorific value of residual waste before thermal recovery	25
3.4.4. Production of “grey compost”	25
4. HOW TO GO FROM A WASTE MANAGEMENT TO A PRODUCT MANUFACTURING PERSPECTIVE ?.....	29
4.1. PRODUCTS FROM BIOWASTE TREATMENT.....	30
4.1.1. Compost and other products.....	30
4.1.2. Biogas	30
4.2. DEVELOPING MARKETS FOR COMPOSTS	31
4.2.1. Market shares	32
4.2.2. Producing quality compost	32
5. WHAT ARE THE COLLECTION OPTIONS ?	47
5.1. BIODEGRADABLE WASTE MANAGEMENT IN EUROPE : STATE OF THE ART	48
5.2. CHOOSING SELECTIVE HOUSEHOLD BIOWASTE COLLECTION	48
5.3. SOME SUCCESS FACTORS FOR BIOWASTE COLLECTION SCHEMES	50
5.3.1. Adapting collection schemes to the local context.....	50
5.3.2. Dealing separately with food and garden waste	52
5.4. WHICH COLLECTION SCHEMES TO CHOOSE?.....	54
5.4.1. Kitchen waste.....	54
5.4.2. Garden waste.....	57

6. WHY PROMOTE DECENTRALISED COMPOSTING?	59
6.1. HOME COMPOSTING	60
6.1.1. Diversion of biowaste from the municipal waste flow	61
6.1.2. What is the quality of composts produced at home ?	61
6.1.3. How to promote Home composting ? Case studies	61
6.2. COMMUNITY COMPOSTING	66
6.3. ON-FARM COMPOSTING : THE AUSTRIAN EXPERIENCE.....	68
7. WHAT ARE THE MANAGEMENT COSTS OF HOUSEHOLD BIODEGRADABLE WASTES ?	69
7.1. COLLECTION COSTS.....	71
7.2. COSTS OF SOME TREATMENT OPTIONS	72
7.2.1. Influence of landfill and incineration costs	72
7.2.2. Composting and AD costs.....	73
7.2.3. Revenues generated from compost	74
7.2.4. Revenues from biogas	75
8. WHAT ARE THE POTENTIAL TOOLS FOR AN INTEGRATED BIOWASTE MANAGEMENT STRATEGY AT THE LOCAL LEVEL?	76
8.1. CREATING SYNERGIES WITH NON-HOUSEHOLD BIOWASTE.....	77
8.1.1. The HORECA sector	77
8.1.2. Sewage sludge	79
8.1.3. Livestock manure and industrial biowaste	79
8.2. REGULATORY, ECONOMIC AND FISCAL TOOLS	79
8.2.1. Legal measures	79
8.2.2. Economic and fiscal incentives	81
9. CONCLUSION	84
PUBLICATIONS OF INTEREST	86
GLOSSARY OF TERMS AND ABBREVIATIONS	87
BIBLIOGRAPHY	88