IIIEE Theses 2006:25

Negotiated Agreements

An analysis of the Third Packaging Covenant in the Netherlands

Nathan Toovey

Supervisors

Naoko Tojo

Carl Dalhammer

Thesis for the fulfilment of the
Master of Science in Environmental Management and Policy
Lund, Sweden, October 2006

Published in 2006 by IIIEE, Lund University, P.O. Box 196, S-221 00 LUND, Sweden,
Tel: +46 – 46 222 02 00, Fax: +46 – 46 222 02 10, e-mail: iiiee@iiiee.lu.se.

ISSN 1401-9191

Acknowledgements

Foremost thanks are extended to my two supervisors, Naoko Tojo and Carl Dalhammer, for being so supportive, approachable, and available. Their criticisms and suggestions were always timely and highly constructive, and they greatly contributed to my understanding of the main topics involved. I can only hope that the quality of my work echoes the quality of the supervision that I received.

I am thankful towards the stakeholder representatives that I interviewed in the Netherlands. I found the interviewees incredibly forthcoming and direct, and they made every effort to ensure that their points were well communicated to me. From these experiences, I would gladly recommend future Masters students to undertake theses in the context of the Netherlands, as the responses from interviewees can be so critical to the success of a thesis.

I greatly appreciate the support of my fellow Batch 11 students, who have been especially helpful in debating different environmetal issues and exploring the merits of different thesis topics. In particular, Raphaël, Bronwen and Patrick – my housemates during the coursework part of the Masters program – have singularly contributed to my overall enjoyment of the past year. My unending gratitude also goes to Stacey, who has been so supportive and understanding in the past months, when I have barely lifted my eyes from my laptop.

Finally, I thank my parents and family who have been so encouraging from afar. Thank you for simply being available to chat to when I really needed to be reminded of home. Thanks also to all the guys back in Melbourne, who constantly remind me that I have an enriching life waiting for me back there. I'll be back soon enough!

Abstract

Negotiated agreements are policy instruments that are increasingly used to manage environmental issues across a range of contexts. At their simplest, negotiated agreements are contractual arrangements between public authorities and an industry that the authorities have targeted to improve their environmental aspects. Part of the attraction of these agreements are the flexibility in their design, and the positive incentives that may be conferred to industry through avoiding more stringent policy tools. This flexibility, however, means that such agreements can exhibit a wide diversity of performances while being poorly modelled by theory. There is therefore a need for research into the performances of their practical implementations.

This thesis presents a case study of a negotiated agreement applied in the Netherlands, a country that has specifically fostered the use of this policy tool. The negotiated agreement under study is the Third Packaging Covenant, used to manage the environmental impacts from packaging and packaging waste in the Netherlands. The case is particularly interesting in that it provides an opportunity to examine a negotiated agreement that has undergone a number of revisions and has recently been terminated. A number of decision points and developments are therefore available for analysis. In addition, the Covenant was professed to implement Extended Producer Responsibility, a progressive strategy for waste management that holds relevance for modern waste policy.

Upon completion of this thesis it was found that the third Covenant was limited in its performance due to a range of factors. In particular, the Covenant was only able to confer limited responsibility onto the packaging industry, and was highly reliant on economic solutions for packaging recycling. Critically, the third Covenant was unable to provide the necessary incentives to industry to appreciably improve recycling rates; to address packaging litter; and to reduce the amount of packaging entering the Dutch market.

Executive Summary

In this thesis an analysis was performed on a national environmental policy instrument, with a view to understanding its strengths and weaknesses in its given context and to draw findings upon the general use of the instrument. The policy instrument examined was a negotiated agreement, which is interesting to study from the basis that there is a limited understanding of how well such instruments perform in practice. Further, negotiated agreements are being used increasingly often to address a range of environmental issues across a diversity of locations, so there is a relevance argument for research into this policy area.

The research methodology applied was a case study, which is amenable to the highly context-dependent nature of negotiated agreements and the complex factors that may influence their performances. Moreover, this analysis sought understanding of negotiated agreements across a spectrum of performance criteria, which favours using a research method that can deliver in-depth, diverse information and can facilitate the understanding of different policy outcomes and their interacting factors. A case study was therefore the logical choice of methodology.

The instrument evaluated was the Third Packaging Covenant, used in the Netherlands to control the impacts arising from packaging waste in that country. This policy instrument ostensibly imposed extended producer responsibility on the packaging chain for the realisation of its objectives. The Covenant terminated recently and has been replaced by the Packagings, Paper and Card (Management) Decree. These facets of the Covenant, among others, made this policy tool particularly attractive to study.

The thesis proceeded with a literature review on policy analysis, with a view to establishing an evaluation framework for the third Covenant. This framework took the form of a selection of criteria that were judged as important outcomes of sound environmental policy. The following criteria were chosen as the performance characteristics through which the Covenant would be analysed:

- the relevance of the targets set for the policy tool in meeting the environmental issue in question;
- the environmental effectiveness of the policy tool regarding packaging litter, packaging prevention and recycling quotas;
- its economic efficiency;
- the distribution of costs arising from the instrument amongst different actors; and
- the level of public acceptance of the policy measure.

Information on the Covenant was obtained through an extensive analysis of policy papers, performance reports, and other documents that granted insight into the Covenant. Interviews were held with different stakeholders to understand the viewpoints of different groups affected by the Covenant. These data were compiled and structured so that the performance of the policy tool with respect to the above criteria could be elucidated. Following on, an analysis was made to determine the significant factors that led to the observed performance.

The Covenant demonstrated limited success in reducing the volumes of packaging put onto the Dutch market during its lifetime. Regarding the objective of reducing packaging litter, the Covenant was confounded by the inability to find a suitable monitoring protocol that would

allow the anti-littering initiatives performed during the Covenant to be assessed. Some studies indicate that, regardless of the monitoring problems, litter was poorly managed by the Covenant.

Regarding the recycling targets established in the third Covenant, while the packaging industry was able to maintain the recycling rates that it had achieved in the prior (second) Covenant, it was unable to demonstrate significant improvements for most of the packaging materials used. The overall recycling target of 70 %, set for the third Covenant, was not achieved – the observed overall packaging recycling rate has steadied at about 62 % in recent years, and it is unlikely that the target would be met under the current conditions.

A number of factors played significant roles in the limited performance of the third Covenant. A critical aspect was the lack of sufficient incentives to drive the packaging chain towards meeting the objectives of the Covenant.

In particular, the Covenant placed limited responsibilities on the packaging chain. For example, its role in respect to recycling activities was to encourage and promote recycling in the household and industrial sectors. Collection of household packaging waste was performed by municipalities, who then transported this waste to the recycling industry. Packaging waste generated by industry remained the responsibility of the waste generator until it was transferred to the recycling chain. Thus, although the packaging chain was responsible for meeting the recycling quotas as listed in the third Covenant, it was not directly involved in any of the activities required for recycling. As such, the packaging chain could only have a limited capacity to improve recycling rates. This was exacerbated by the agreement that plastic packaging derived from households did not require recycling.

With regard to managing litter, the packaging chain focused its efforts on education and information programmes. Although such programmes deliver awareness raising on the subject of litter, they do not provide the Dutch public with the motivation to avoid littering. On the other hand, a motivation to dispose of litter correctly may be granted through the use of a deposit-refund system.

In this thesis, the packaging industry's aversion to a deposit-refund system was identified as the main 'regulatory threat' compelling the industry to engage in the Covenants in the first place. The Dutch Ministry charged with environmental issues, VROM, finds these systems appealing as they may address litter; the recycling of drinks packaging; and the lost environmental benefits that have occurred through the diminishing use of refillable drinks containers. The packaging industry, represented by the organisation SVM·Pact during the third Covenant, views deposit-refund systems as being financially onerous. In signing the Covenants, the organisation hoped to avert the imposition of a deposit-refund system in the Netherlands.

With the low performance of the third Covenant, VROM has decided to terminate the Covenant period. Instead, the Packagings, Paper and Card (Management) Decree has entered into force, which contains provisional Articles for a deposit-refund system. The provisional Articles may enter into force depending on the ability of the packaging industry to meet the new targets of the Decree. The findings of this thesis suggests that the packaging industry will find the targets challenging, although the political climate in the Netherlands may prevent the establishment of a deposit-refund system.

Table of Contents

List of Figures
List of Tables

1 INTRODUCTION 1

1.1 AIM 1
1.2 SCOPE 2
1.3 METHODOLOGY 3
1.4 STRUCTURE OF THE REPORT 7

2 ON NEGOTIATED AGREEMENTS AND THE DEVELOPMENT OF AN ANALYSIS FRAMEWORK 8

2.1 INTRODUCTION 8
2.1.1 Voluntary Approaches 9
2.2 NEGOTIATED AGREEMENTS 10
2.2.1 Incentives for industry 10
2.2.2 Incentives for public authorities 12
2.2.3 Aspects of negotiated agreements 13
2.3 ANALYSES OF NEGOTIATED AGREEMENTS 15
2.3.1 Modelling of negotiated agreements 16
2.3.2 Analysis of negotiated agreements in practice 16
2.3.3 Other criteria for analysis 17
2.3.4 Challenges in analysing negotiated agreements 18
2.4 DEVELOPING A FRAMEWORK FOR ANALYSIS 19

3 BACKGROUND INFORMATION ON PACKAGING WASTE POLICY IN THE NETHERLANDS 22

3.1 INTRODUCTION 22
3.2 BACKGROUND FOR POLICY-MAKING IN THE NETHERLANDS 22
3.2.1 Consensus decision-making and the polder model 22
3.2.2 Extended Producer Responsibility 23
3.3 POLICY IMPLEMENTATIONS FOR PACKAGING WASTE 23
3.3.1 Early developments 23
3.3.2 The First Packaging Covenant 24
3.3.3 The Packaging and Packaging Waste Regulations 26
3.3.4 The Second Packaging Covenant 27
3.3.5 The Third Packaging Covenant 28
3.3.6 The Packaging, Paper and Card (Management) Decree 30
3.4 CONCLUDING REMARKS 31

4 RESPONSIBILITIES UNDER THE THIRD COVENANT 33

4.1 PACKAGING WASTE FROM THE KWDI SECTOR 33
4.2 PACKAGING WASTE FROM HOUSEHOLDS 34
4.2.1 Metals 34
4.2.2 Glass 35
4.2.3 Paper and Cardboard 36
4.2.4 Plastic 36
4.3 MANAGEMENT OF LITTER 39
4.4 PRODUCERS AND IMPORTERS SUB-COVENANT 41
4.4.1 Protocol on packaging prevention 41
4.4.2 Protocol on product reuse 42
4.5 MONITORING DUTIES 42
4.5.1 Total amount of new packaging 43

4.5.2 Amount recycled and recovered for each packaging material ... *44*
4.5.3 Total figures for recycling rates and for disposal without recovery ... *44*
4.6 COMPLIANCE AND ENFORCEMENT ... 44
4.7 CONCLUDING REMARKS ... 45

5 PERFORMANCE OF THE THIRD COVENANT ... 47

5.1 ENVIRONMENTAL EFFECTIVENESS AND POLICY RELEVANCE ... 47
5.1.1 Policy relevance ... *48*
5.1.2 Environmental effectiveness of the implementation ... *50*
5.2 ECONOMIC ASPECTS ... 55
5.2.1 Economic efficiency ... *55*
5.2.2 Distribution and transfer of costs ... *58*
5.3 STAKEHOLDER RESPONSES TO THE THIRD COVENANT ... 61
5.3.1 Consumer and environmental interest groups ... *61*
5.3.2 VROM ... *62*
5.3.3 Nedvang ... *63*

6 DISCUSSION ... 65

6.1 ECONOMIC EFFICIENCY AND ENVIRONMENTAL EFFECTIVENESS ... 65
6.2 VARIATIONS IN RECYCLING ACCORDING TO MATERIAL TYPE ... 66
6.2.1 Metal ... *66*
6.2.2 Glass ... *66*
6.2.3 Paper and cardboard ... *67*
6.2.4 Plastic ... *67*
6.2.5 Wood ... *68*
6.2.6 Comments ... *68*
6.3 CHALLENGES IN CONTROLLING LITTER ... 69
6.3.1 Failures in monitoring ... *70*
6.3.2 Alternative measures to confront litter ... *70*
6.4 EPR AND THE THIRD COVENANT ... 71
6.5 PUBLIC ACCEPTANCE AND THE THIRD COVENANT ... 72
6.6 INTRODUCTION OF THE DECREE ... 73
6.6.1 Extending EPR ... *74*
6.6.2 Beverage packaging and a deposit-refund system ... *75*

7 CONCLUSION ... 78

7.1 PACKAGING PREVENTION ... 78
7.2 RECYCLING ... 78
7.3 LITTER ... 79
7.4 OVERALL ASSESSMENT ... 80

BIBLIOGRAPHY ... 82

APPENDIX – COMMUNITY LEVEL LAWS ... 85

DIRECTIVE 94/62/EC AND AMENDMENTS ... 85

List of Figures

Figure 5-1: Packaging waste disposed of without recovery in the Netherlands (1998-2004)…..51

Figure 5-2: Trend in the overall recycling rate for packaging in the Netherlands (1998-2004)…..52

Figure 5-3: Overall recycling performances for packaging in the EU, showing selected countries (1997-2001)…….52

Figure 5-4:Trends for packaging material recycling rates in the Netherlands (1998-2004)…..54

Figure 5-5: Trends for packaging material recycling rates in the Netherlands (1993-1997)…..54

List of Tables

Table 1-1:Main information sources for analysing the Third Packaging Covenant 6

Table 3-1: Targeted recycling rates under different laws and Covenants 31

Table 4-1: Recycling performance by packaging material (2004)..... 37

Table 4-2: New recycling targets for plastic packaging types as directed by the Packaging Decree (Article 4). 41

Table 5-1: Comparison of recycling targets between the German and Dutch systems.....50

Table 5-2: Recycling of packaging waste from all sectors by material, 2004. 53

1 Introduction

In this thesis an analysis was performed on a national environmental policy instrument, with a view to understanding its strengths and weaknesses in its given context and where possible, to draw findings upon the general use of the instrument. The instrument investigated was a negotiated agreement, which can be likened to a contract between a regulated industry and the public authorities. The terms of the agreement are determined through discussion between the two parties. Negotiated agreements make an interesting instrument to study because they have undergone a recent growth in their usage, especially in Europe, and so information on their strengths and weaknesses holds a relevance to contemporary environmental policy-making. As their name suggests, negotiated agreements are a tool with an inherent flexibility, where the arranged terms largely depend on gaining mutual consent between the parties. They evolved 'organically' in the pragmatic world of modern policy and are highly diverse, rather than being strictly applied from academic models in environmental economics. Understanding of this instrument from a theoretical viewpoint may therefore be limited. If so, there is all the more need to study negotiated agreements as 'real world' policy implementations.

For this thesis, the instrument chosen for scrutiny was the Third Packaging Covenant, used in the Netherlands to control the impacts arising from packaging waste in that country. This policy instrument ostensibly imposed extended producer responsibility on the packaging chain for the realisation of its objectives. The Covenant terminated recently and has been replaced by the Packagings, Paper and Card (Management) Decree. This conveniently facilitates an inquiry into the experiences gained from a negotiated agreement, and into the decision factors that led to a change in policy instrument. Further elaboration into the rationale for choosing this policy instrument for research may be found further on in this chapter.

The following sections of the Introduction detail the Aim, Scope, and Methodology adopted in this thesis work. Following on, the main features of this thesis document are delineated in the Structure section.

1.1 Aim

The overall aim of this thesis was to gain an understanding of the strengths and weaknesses of a negotiated agreement applied to treat a major environmental concern. A case study on the third Covenant on packaging waste in the Netherlands was chosen as the conduit to this understanding.

The main component objectives of this aim were:

- to evaluate the performance of the Third Packaging Covenant of the Netherlands;
- to investigate the factors that may have shaped this performance; and
- to identify contexts where a negotiated agreement may or may not be appropriate.

Significantly, the performance evaluation was not exclusively limited to whether or not the Covenant met its stated objectives; additional essential criteria were investigated. These criteria were included on the basis that sound policy must be designed to accommodate other needs, goals and values of society beyond the environmental dimension.

The aim, in setting out what was to be achieved in the project, provided a clear guidance for the major boundaries of the activities performed during the project. These are discussed in the following section.

1.2 Scope

The instrument chosen to study in this thesis, as mentioned in the introductory paragraphs, was the Third Packaging Covenant of the Netherlands. This negotiated agreement (or 'covenant', to use Dutch terminology) was the third instalment of an agreement between the Dutch national government and private actors in the packaging chain. Its intent was to restrict the major impacts of packaging consumption in the Netherlands: resource inefficiency; impacts from landfill and incineration; and littering.

This covenant is particularly interesting firstly because, as a third iteration, the Netherlands has had several opportunities to 'get it right'. Secondly, the use of covenants is an explicit policy approach in the Netherlands, laid out in their National Environmental Policy Plan in 1989, so the country has gained some wide experience in their use. Thirdly, recent Dutch policy on packaging has moved away from the covenant approach, permitting an opportunity to study the reasons behind the policy shift and the lessons learned by the main actors. And finally, the third Covenant was professed to employ extended producer responsibility (see Box 1) as a core concept in managing the end-of-life effects of packaging. In recent years, this concept has been extensively absorbed into national policies concerning product waste throughout Europe and beyond, so it is worth looking at an application of EPR in packaging.

Box 1. Extended Producer Responsibility in the Netherlands

Extended producer responsibility, EPR, is a strategy based on charging the producers of a product with the responsibility – financial, physical, or other – for the environmental impacts that arise through the entire life cycle of that product, with an emphasis on the impacts of waste disposal. The concept has been defined in numerous ways (Lindhqvist, 2000, pp. 52-56), and an examination of these definitions is beyond the scope of this thesis. But with a view to gaining a working definition for the purpose of this paper, the following early explanation is suitable (Lindhqvist, 2000. p. ii):

> *'Extended Producer Responsibility is an environmental protection strategy to reach an environmental objective of a decreased total environmental impact from a product, by making the manufacturer of the product responsible for the entire life-cycle of the product and especially for the take-back, recycling and final disposal of the product. The Extended Producer Responsibility is implemented through administrative, economic and informative instruments. The composition of these instruments determines the precise form of the Extended Producer Responsibility.'*

This statement identifies the take-back, recycling and disposal to be critical concerns in EPR. The way in which producers are compelled to be responsible for these activities delineates the exact form of EPR used.

EPR is a central strategy for waste management in the Netherlands (VROM, 2001b). It was professed by the Ministry for Housing, Spatial Planning and the Environment (VROM, or 'the Ministry') in the Netherlands to be a significant feature of the Covenants for packaging. In this thesis, special attention will be paid to the extent for which producers (that is, the packaging chain) are obliged to take responsibility for the take-back, recycling and final disposal of their products. An understanding of the use of EPR in the Netherlands may be facilitative in determining the strengths and weakness of the third Covenant in meeting its objectives.

Studying a policy instrument on packaging waste has its own research value. Waste generation is a major environmental impact in modern societies. Packaging waste is particularly important to study as it has a high volume (from both households and industry); has a high profile; and is a major source of litter in public spaces. This has been recognised on the European scale, with the adoption of Council Directive 94/62/EC on packaging and packaging waste in 1994 (see the Appendix for a description). Packaging waste is interesting in that it is amenable to recycling, which makes a significant contribution to managing this waste in the EU. It is also amenable to prevention. Thus packaging waste should be investigated in order to examine the different factors, including policy decisions, that assist and encumber the treatment of packaging waste.

The Third Packaging Covenant dealt with a suite of environmental concerns surrounding packaging and packaging waste in the Netherlands. However, only some of these concerns persisted as dominant policy issues. These persistent concerns make up the focus areas for this thesis, and are:

- packaging prevention;
- recycling of packaging waste material; and
- litter.

These three topics will be emphasised throughout this report. While all of the concerns of the Covenant were critical to its success, the above listed served as major focal points for public policy-making directed towards packaging and packaging waste. Other issues in the third Covenant are brought up in this thesis only where they had a direct bearing on these focal points.

The third Covenant as a policy tool did not exist in isolation. In this thesis, efforts were made to describe the policy context of the Covenant to better understand the other policy and regulatory forces at play that affected the third Covenant. These include the EU Directive on packaging and packaging waste, the earlier Covenants, and other national laws that pertained to packaging waste. Chapter 3 covers these policy tools in detail.

The completion of this thesis rested upon performing an array of information gathering and analysis tasks, discussed in detail in the following section. The principal interest in such information was in gaining satisfactory data on the policy tool. Information was also required for the construction of an analytical framework that could be used to scrutinise the policy tool. There finally remained the task of applying this framework to the policy tool and documenting accordingly, which formed the main part of this thesis work (see Chapters 5 and 6). The precise steps taken during this thesis work are recounted below, in the Methodology.

1.3 Methodology

This thesis called for a case study on a negotiated agreement. A case study (see Box 2, below) is the logical choice for examining negotiated agreements based on the need to gain a broad and detailed understanding of a potentially complex policy instrument which is poorly addressed by theory. Moreover, the great diversity in negotiated agreements makes it challenging to perform direct comparative studies on these instruments, or to model them. On the contrary, their diversity in form and context necessitates a descriptive, intensive methodology like the case study approach.

With these issues in mind, a case study becomes the clear choice for examining negotiated agreements. The unique aspects of the Third Packaging Covenant – expounded upon in the previous section – favour this particular implementation of negotiated agreements as a case to investigate.

Box 2. The third Covenant as a case for examination.

Yin (2003, p. xi) recommends that case studies are the appropriate research method when:

- research topics are defined broadly, rather than narrowly;
- when contextual and complex multivariate conditions need to be covered, rather than isolated variables; and
- when multiple, rather than singular, sources of evidence are relied upon.

Negotiated agreements, as will be clarified in Chapter 2, are broad in nature. Their singular defining property as an environmental policy tool is that they require the two parties, industry and public authorities, to mutually consent to an arrangement of terms ('the agreement') in preference to some other regulatory measure. Such an amorphous category of instruments precludes the use of refined research topics and the use of methodologies that seek to make generalisations on the given policy measure. In addition, this thesis seeks to gain an understanding of a negotiated agreement across a spectrum of criteria, rather than in a single dimension, which requires that the research topic be exploratory, rather than narrowly focused.

Negotiated agreements are also highly dependent on their context, as they are shaped on a case-specific basis. Although policy-makers may emulate the implementation of a given negotiated agreement used elsewhere, they have the flexibility to make changes in anticipation of improved outcomes or greater relevance to the context at hand. Hence, negotiated agreements are highly context-sensitive. Understanding of this policy tool therefore benefits from investigating a given context in depth through a case study, more so than from analysing information across contexts and implementations that may be only superficially related.

The need for multiple sources of evidence is not intrinsic to the study of negotiated agreements. But as mentioned, this thesis investigates a negotiated agreement across several criteria, and so a range of information sources must necessarily be exploited.

Being mindful of these research considerations, i.e. that understanding is sought on a negotiated agreement according to several performance criteria, employing a case study is a highly effective means to obtain the desired insights.

The core tasks of this thesis concerned the gathering of information, and its subsequent analysis. Critically, the following information was sought:

- Theory on the use of public policy instruments, especially negotiated agreements, to achieve environmental goals – this information was required to build up an understanding of policy-makers' expectations on the instrument; why it may be effective; and what the desired outcomes of a negotiated agreement are.

- Standard methodologies in the analysis of public policy instruments used in practice – this was required so that an informed choice in analytical methodology could be made and then applied to the third Covenant.

- Details of the policy tool applied in the case under investigation, i.e. the Third Packaging Covenant in the Netherlands – these details were necessary to develop a comprehension of how the policy objectives were expected to be achieved, and how the Covenant was meant to function.

- Background information on the legal, historical and societal contexts of the policy tool used – such contextual features allow an understanding of the specific setting in which the policy tool is embedded, which will play a role in the outcomes observed upon implementing the Covenant.

- Knowledge of the environmental, economic and social effects of the policy tool in use, and the ways in which these effects interact – these effects form the 'outputs' of the policy which enable an evaluation of whether the policy tool achieved its objectives; and an understanding of the nature of any side-effects occurred.

Initial tasks included a literature review of the present state of knowledge regarding the performance of negotiated agreements; and of the typical criteria chosen to assess policy instruments, including such agreements. The material collated for this part of the project was sourced from textbooks, (online) academic articles, and short reports. From these initial investigations, a framework of evaluation was adopted (described in Chapter 2), to apply to the policy measures investigated.

The Third Packaging Covenant of the Netherlands was evaluated based on these criteria. The background data necessary for this evaluation were gathered using interviews with key stakeholders; and by examination of documents (see Chapters 3, 4 and 5). The interviews were conducted using a series of open-ended questions designed to develop a wide comprehension of the major issues at hand. Interviewees were encouraged to elaborate on the particular themes they thought were most notable, in order to understand the range of priorities recognised by the different stakeholder groups. Each interview was between sixty and ninety minutes in duration. The documents examined included reports, and policy documents written by the parties to the Covenant and other stakeholders.

Table 1-1 below summarises the main information sources used. Although the nature of the evaluation was qualitative, statistics sourced from prior studies and reports were used for supporting information whenever possible.

Table 1-1:Main information sources for analysing the Third Packaging Covenant

Description	Information Source	Information
Policy Documents	Council Directive 94/62/EC	Requirements on EU Member States for the management of packaging and packaging waste
	Packaging and Packaging Waste Regulation 1997	Responsibilities of different actors in the Packaging Regulation (1997-2005)
	The Third Packaging Covenant	Responsibilities of different actors in the third Covenant (2002-2006)
	The Packagings, Paper and Card (Management) Decree 2005	Responsibilities of different actors in the Packaging Decree (from 2006)
Personal interviews, the Hague	Packaging co-ordinator at VROM	Stakeholder views (VROM)
	Representative of Nedvang / SVM ·Pact	Stakeholder views (packaging industry)
Telephone Interview	Representative of the Recycling Netwerk	Stakeholder views (environmental movement)
Report on the Progress of the Covenant	Packaging Committee Report (2001)	Performance of the second Covenant in 2000
	Packaging Commission (2005)	Performance of the third Covenant in 2004
Report of the implementation of the Packaging Directive	Perchards (2005)	Environmental effectiveness of Dutch packaging policy
	RDC-Environmental and Pira International (2003)	Environmental effectiveness of Dutch packaging policy
	Ecolas N.V. and Pira International (2005)	Environmental effectiveness of Dutch packaging policy
Analysis on the cost efficiency of packaging waste policy in several EU countries	Sofres (2000)	Cost efficiency of the Dutch packaging waste policy (and other countries)
Report on littering in the Netherlands	TNS NIPO (2005)	Littering volumes in the Netherlands
Report on municipal waste collection in the Netherlands	Rense Milieu Advies (2005)	Collection rates for different packaging materials from Dutch households in 2004

From this broad aggregation of data, an analysis of the main factors affecting the success of the Covenant was performed (see Chapters 6 and 7), and conclusions were drawn upon the suitability of the Covenant in the given context. Particular attention was paid to the performance criteria (elaborated in Chapter 2), and the dominant features of the Covenant that impacted this performance.

1.4 Structure of the report

This document is organised into the following chapters, based on presenting the major details of the thesis in a structured manner:

1. Introduction
2. On negotiated agreements and the development of an analysis framework
3. Background information on packaging waste policy in the Netherlands
4. Responsibilities under the third Covenant
5. Performance of the third Covenant
6. Discussion
7. Conclusion

2 On negotiated agreements and the development of an analysis framework

2.1 Introduction

For public authorities, environmental policy is principally concerned with shaping the behaviours of the various sectors of society – private individuals, organisations in the private and public sectors, and so on – in order to protect and enhance the condition of the environment. The instruments deployed to this end have evolved as the complexity of environmental issues, and their inseparable association with social and economic realities, have become increasingly understood. Consequently, the modern society has a range of environmental policy tools available, which may be applied according to the relevant environmental, social and economic factors.

The following broad types of instruments are some of the current options available for executing environmental policy:[1]

Regulatory instruments seek to directly alter the behaviour of organisations through direct permits and licenses, bans on certain behaviours and materials usage, and other forms of regulation. Failure to comply with regulation generally causes a sanction against the responsible person and / or organisation, such as fines, revocation of license to operate, or criminal charges.

Economic instruments modify the behaviours of firms regarding their environmental aspects through changing the economic effects of their behaviour. This may be in the form of emissions fees, environmental taxes, and tradable permits markets for the control of undesirable activities; or various subsidies (such as grants and soft loans) to promote improved environmental performances. Barde (1994) comprehensively discusses the main features of this type of instrument.

Voluntary approaches involve efforts by industry, possibly initiated by public administration, to produce outcomes beyond those required by environmental regulation. Such approaches have taken a wide variety of forms, as each instance has evolved individually from unique societal, legal, and economic preconditions.

Informational instruments are approaches in which long-term behaviours and attitudes of society are shaped by informational and communication tools, with the intent of producing better environmental outcomes. Anti-littering awareness campaigns, conducted in many parts of the world, exemplify this type of instrument.

In practice, these instruments may be applied in isolation to resolve a given environmental issue, so that only one approach is relied upon. Alternatively, public administration may seek to use a number of instruments at once, in a 'policy mix'. This paper will centre on examining the use of a type of voluntary approach – negotiated agreements – for addressing environmental concerns.

[1] There is no singular preferred approach in the literature for categorising the public policy instruments that are available for treating environmental issues. The relatively simple list used here is derived from OECD (1998a).

2.1.1 Voluntary Approaches

Voluntary approaches, as a means to handle environmental issues, differ from economic instruments such as emissions taxes and tradable permits in that they have not been derived from pre-existing theory (OECD, 1999, p.15). Instead, they were invented as pragmatic solutions to specific problems by a range of actors including policy makers, industry associations and individual firms. Thus, there is no guiding theoretical principle as to what should be the prototypical voluntary approach and what is the best way to implement this tool.[2] The result is that voluntary approaches occur in many guises, depending on the milieu that existed prior to and during the development of the voluntary approach.

Despite this variation, the literature widely recognises four main types of voluntary approaches, summarised by OECD (1999, p. 16):

1. unilateral commitments made by polluters;

2. agreements that have arisen between polluters and those affected by the pollution;

3. environmental agreements negotiated between public administration or authorities and industry; and

4. voluntary programmes established by public authorities, which individual firms may choose to participate in.

It should be noted that, across the four categories of voluntary approaches, there are differing levels of involvement from public authorities, and thus differing capacities to influence industry. The third type of voluntary approach, which will be referred to as **negotiated agreements**,[3] is particularly interesting in that it has now become widely used in the developed world as a component of environmental policy. Indeed, over 300 negotiated agreements have been signed between national governments and industry within the European Union (Paton, 2002), and the Netherlands has used negotiated agreements (called 'covenants') as the dominant tool for managing the environmental impacts identified in its National Environmental Policy Plans (de Hoog, 1998).

The rest of this chapter is devoted to a discussion of negotiated agreements, followed by the development of an analysis framework. Section 2.2 examines some of the typical features of negotiated agreements as they have developed, along with some of the critical issues faced in their deployment. Section 2.3 discusses the ways in which negotiated agreements have been evaluated in the literature and explores the different criteria for assessing negotiated agreements. Finally, in Section 2.4 a framework for policy analysis is laid out, based on the preceding material. This framework will be the foundation for evaluating the Third Packaging Covenant, in Chapter 5.

---

[2] This complication is deepened by the inconsistent terminology used in the literature: the spontaneous evolution of voluntary approaches has concomitant diversity in the language pertaining to this area. For simplification, and regardless of the terms used in the original sources, this paper will follow the terminology used in the OECD (1999) paper.

[3] Another term which is gaining common usage is 'voluntary environmental agreements'. However the term should be avoided, as it has ambiguous connotations which are discussed in Box 3.

2.2 Negotiated Agreements

OECD (1998, p. 11) succinctly defines negotiated agreements:

> *'Negotiated agreements (NAs) are contracts resulting from negotiations between public (national, federal or regional) authorities and industry…their contents is [sic] not defined unilaterally by either industry or public bodies, but jointly by both.'*

As an environmental policy instrument, negotiated agreements are therefore somewhat broad. Moreover, the legal significance of these agreements varies in different countries,[4] thereby questioning the degree to which they can be universally defined as a contract. Combined with the unsystematic uptake and the varied form of this tool mentioned earlier, this makes it difficult to examine negotiated agreements in a theoretical sense. Nonetheless it can be said that all negotiated agreements are arrangements that appear, from the points of view of the two parties, preferable to the alternative instruments that may arise in reaching environmental goals.[5] The motivations for the two parties – industry and public authorities – in coordinating a negotiated agreement are presented in the sections that follow.

2.2.1 Incentives for industry

Negotiated agreements are an arrangement between private industry and public authorities with the view to obtain a given environmental outcome. This desired outcome dictates which sectors of industry shall be targeted by the agreement, dependent on which sectors significantly impact the relevant environmental features. Those sectors of industry will only become willing participants to the negotiation process if there is a sufficient incentive. The main incentive is usually identified (for example, in OECD, 1999, p. 18) as an aversion to new environmental regulations that are threatened by the public authorities if the negotiated agreement is unsuccessful (commonly referred to in the literature as a 'regulatory threat'). Karamanos (2002) summarises the motivating factors for industry in detail, and is used as the main source for this section, except where otherwise stated.

Direct assistance

In some forms of negotiated agreement, the public authority may employ a 'carrot-and-stick' stratagem as an inducement for industry involvement. As described in the preceding paragraph, the threat of environmental regulation or economic instruments serves to motivate industry towards an agreement (or more precisely, away from an undesirable alternative). In some instances, this is used in parallel with positive incentives such as technical assistance and information, or subsidies and grants for environmental investments. Firms can therefore choose to join the voluntary system and draw on these benefits, or remain outside the system at the risk of being less competitive. In such cases, the public authority is directly applying both positive and negative pressures upon the industry organisation. These pressures, as direct incentives, place the notion that negotiated agreements are truly 'voluntary' in doubt – see Box 3 for a discussion. Nonetheless, offerings of direct assistance work to enhance the overall bargaining power of the public authority during the negotiation process, and to persuade industry to join negotiations in the first place.

---

[4] For example, constitutional law in Germany forbids the gorvernment from signing negotiated agreements, and they are therefore legally non-binding. In contrast, negotiated agreements in the Netherlands are binding, however contracts must be signed with individual firms, instead of industry organisations (OECD, 1998a, p. 11).

[5] If this were not the case, either industry or public authority would likely withdraw from negotiation.

Operational savings

For certain types of policies – such as energy reduction policies – savings for industry can be directly coupled with improved environmental performances. This may automatically serve to motivate industry to go beyond compliance with existing legislation. The question may therefore be asked that if environmental improvements can yield better economic performance, why don't companies spontaneously engage them? There are many reasons for this and a full answer is far beyond the scope of this paper,[6] however a simple explanation may be that the economically lean operation of modern firms may preclude the opportunity to comprehensively explore the cost reducing measures that are available. The opportunities for 'no-regrets' initiatives may therefore work well with the pursuit of negotiated agreements, and with the performances beyond compliance that are expected. Moreover, increased environmental performance may also work to reduce liability costs and establish new markets, as is often promoted in the literature (Porter and Van der Linde, 1995).

Reduction in regulatory costs

There are a number of reasons why industry may seek to avoid regulatory procedures in their own right, by pursuing a negotiated agreement with public authorities. Foremost, the processes of undergoing inspection and applying for permits entail costs to individual firms that may be mitigated through a voluntary initiative (de Hoog, 1998). Secondly, negotiated agreements generally allow greater flexibility in the measures and scheduling for improving environmental performance, compared to regulation. Thirdly, a common aspect of negotiated agreements is the provision that the public authority will not introduce any new regulations or taxes (for the environmental issue of concern) so long as the terms of the agreement are fulfilled – long term investments become more appealing. Fourthly, negotiation may allow industry organisations to weaken the conditions of the agreement (in terms of abatement level or schedule, or compliance measures) so that the industry can merely conduct 'business-as-usual'. This last point, called 'regulatory capture', can compromise the objectives of the negotiation and is thus highly undesirable for society and for the public administration. Nonetheless, the opportunity for regulatory capture works as a major incentive for industry organisations to become involved in negotiations with public authorities.

[6] Interested readers are directed towards Porter and van der Linde (1995) for a discussion on the economic benefits of 'going green'.

Box 3. Voluntary or involuntary?

Some authors have expressed that viewing negotiated agreements as a form of voluntary instrument is inappropriate. In examining the Duales System Deutschland (DSD) organisation for collecting, sorting and recycling packaging waste in Germany, Neumayer (2000) remarks that few voluntary agreements (VAs) could really be called 'voluntary' in the sense of being 'unforced by law and unpersuaded by financial incentives':

> *'…the private sector swallows the bitter pill of self-regulation in order to fight off the even more dreadful medicine of binding public regulation. In reality, therefore, one can observe a plethora of VAs with a varying degree of impact of public authorities.'*

Dröll (1998) shares this viewpoint:

> *'…practically all agreements include an element of pressure exercised by public authorities… the word "voluntary" might be misleading because compliance with voluntary agreements should not be voluntary.'*

Finally, OECD (1999, p.17) draws similar conclusions as part of a broader discussion on the terminology of voluntary approaches:

> *'… the term "voluntary" is questionable where the agreement is signed by industry with public authorities. In fact, they may use their coercive power to pose a threat of introducing new regulation if industry does not abate pollution.'*

These authors highlight that the decision to participate in negotiated agreements is not purely voluntary. Industry groups must choose between having an active role in shaping the responsibilities and expectations placed on its members, or having new responsibilities and expectations dictated to them by public authorities. It is clear that in most situations industry would favour the former option over the latter. But in the sense that these responsibilities and expectations are unavoidable, the decision to take the more preferable option of a negotiated agreement is not purely voluntary.

2.2.2 Incentives for public authorities

OECD (1999, p.46) summarises the main incentives for public authorities for implementing negotiated agreements. A critical driver is the belief that negotiated agreements foster greater positive participation from industry than traditional regulations do, and that positive behaviour from industry is a necessity for cost effective environmental outcomes. From the preference of industry for negotiated agreements over command-and-control approaches (as outlined in the previous section), it follows that industry organisations adopt a proactive posture towards settling environmental issues in this way. That is, industry 'wants' the negotiated agreement to work and therefore must be cooperative in its implementation. This contrasts markedly from the resistive, adversarial attitude traditionally adopted by industry towards prescriptive regulations and environmental taxes. Public authorities supposedly benefit from greater information sharing and cooperation from industry members (supported by industry organisations), and from less obstructive behaviour during compliance checking. Where NGOs and consumer organisations are invited to participate in negotiating the agreement, the public authorities also benefit from gaining a wider endorsement for their actions.

2.2.3 Aspects of negotiated agreements

Negotiated agreements, despite the broad definition applied at the beginning of this chapter, can be further described according to some major features, which are discussed as follows.

Stakeholder involvement

The definitive requirement for negotiated agreements is that the relevant public administrative bodies and the industry must be represented during the negotiation procedure. Industry representation may take the form of the involvement of an industry organisation (or 'branch organisation'), which may be composed in response to new developments in policy, or may already be in existence. Alternatively, the larger firms that constitute the industry majority may represent the industry. A major aspect of stakeholder involvement in negotiations is the conflict between gaining broad agreement and keeping the costs of negotiation low. In other words, as the number and diversity of participants grows, it can become harder to gain consensus (Nunan, 1999). The particular composition of the industry involved is therefore critical – industries and sectors that display homogeneity amongst its few members may have significantly lower costs to negotiate than those that have many, diverse players (Cabugueira, 2001).[7]

Early forms of negotiated agreement limited involvement to public authorities and industry, with the result that environmental organisations felt that their capacity to follow and influence policy had been reduced (Hontelez, 1998). Greater public access to the results of these agreements and to the performances of individual companies following the agreements has improved the quality of agreements and their acceptance. In particular, regulatory capture may be prevented when NGOs and the public are better informed (OECD, 1999, pp. 37-38). Inclusion of NGOs is now strongly recommended when drawing up negotiated agreements (Cabugueira, 2001; Mascarenhas, 2002), despite the difficulty in obtaining consensus that this may bring.

Environmental targets

Negotiated agreements exhibit variation with regard to whether negotiations include the environmental targets in question, or whether these targets are non-negotiable (OECD, 1999, pp.20-21). This aspect of negotiated agreements is critical, as the level of the environmental target is a determinant of the effectiveness of the agreement (see Box 4). Where targets are open to discussion, the risk of regulatory capture may be greater, so it has been recommended that targets should be set prior to negotiation (Hontelez, 1998) as has been demonstrated in the Dutch approach. In such cases, negotiations centre upon the scheduling of the targets, and other practical aspects of implementation.[8] However, this approach is disadvantaged in that there may be diminished interest to participate on behalf of the private sector, and the public administration must expend resources to estimate which target levels are actually the most suitable to aim for.

---

[7] An interesting case to note is the wide use of negotiated agreements for the control of packaging waste. Agreements for this concern involve a great diversity of actors due to the many different types of packaging waste, and the many different sectors (manufacturers, wholesalers, retailers etc.) in the product chain. It is therefore unsurprising that attempts to implement packaging waste agreements have displayed very different levels of success.

[8] Implementation-based agreements, it is emphasised, are not free from regulatory capture by industry. Various aspects of an agreement – monitoring and scheduling of inspection, reporting methods, the nature and level of sanctions etc. – can allow the industry organisation to progressively weaken an agreement for its members' benefit. Non-negotiable targets do not preclude the need for other safeguards against regulatory capture.

Box 4. Effectiveness and regulatory capture

It has been argued that goal-based negotiated agreements carry the risk that effectiveness will be compromised during the negotiation process (see Golombek and Moen, 2002). In negotiating with a resisting industry, it is expected that this industry will try to achieve environmental standards that are as close to the 'business-as-usual' case as possible, and far from the optimal case. However, negotiated agreements are hardly isolated in terms of their exposure to regulatory capture tactics: traditional environmental regulation and economic measures are also risked by this behaviour (OECD, 1999, p. 36). Moreover, modern negotiated agreements are recommended to have an element of third party involvement (such as NGOs or consumer organisations) to provide transparency and openness. In contrast, lobbying and other pressures from industry aimed at sabotaging other environmental policy implementations may be undertaken in a more clandestine manner than in 'open' negotiations. It can be argued, then, that well-designed negotiated agreements have no fewer safeguards against regulatory capture than other instruments. Negotiated agreements should not be simply compared to the theoretical workings of other environmental policy tools that are rarely applied perfectly in practice.

Negotiation

The central process in deploying this voluntary instrument is, of course, negotiation. A discussion of the deeper complexities of negotiation theory, and the complicated dynamics between participants, goes beyond the scope of this paper. The crux of negotiating in this current setting is that both parties – industry and public authorities – are motivated for the negotiation to be successful. However, assuming that firms operate according to bounded rationalism and self-interest, industry members are further motivated to keep their costs to a minimum. Thus firms may aim to maintain 'business-as-usual' activities while permitting the perception that the negotiated agreement has led to greatly improved performance and behavioural changes. On the other hand public authorities, assuming they work to uphold the rights and interests of the citizenry that they represent, are motivated to secure their environmental objectives with the lowest social cost possible. Clearly these two goals are often in conflict. The environmental outcome of a successful negotiation may lie somewhere between the outcome that is economically optimal for the industry members and the outcome that is optimal for society. The exact position of this outcome depends on the relative bargaining positions of the two parties, which are shaped by such factors as information asymmetry; comparative resources that can be deployed for negotiating; the levels of motivation for the two parties; perceived bargaining strength of the opponent; and so on. [9]

[9] Of course, this explanation is highly simplified: firms do not always operate in the economically self-serving manner described; public authorities (or, more correctly, the personnel within a public authority) often have more complex ambitions than to satisfy the needs of the public. It can be argued that the two parties in a negotiated agreement have the common goal of producing the *public perception* that the agreement has worked to meet the desired objectives. The true outcome of the agreement is influenced by the ways in which these parties deviate from their assumed behaviour, as well as their individual bargaining powers during the negotiation. This reinforces the need for public scrutiny and third-party involvement.

Sanctions, regulatory threats and compliance

Successful negotiation of an agreement does not guarantee in itself that the desired environmental outcomes will be achieved. Apart from the weakening of expectations upon industry that may arise in the negotiating process (particularly if the targets themselves are negotiable), the success of an agreement may also be compromised if industry is insufficiently stimulated to comply. Compliance requires effective monitoring for the environmental performances of the industries involved, and appropriate sanctions for non-compliance.[10] The monitoring techniques and penalties for non-compliance have taken many forms for negotiated agreements in practice; a full discussion will not be entered into for this paper. However, it should be recognised that compliance considerations illuminate the strength of negotiated agreements in a policy mix. That is, non-compliant firms may be subject to more restrictive or more expensive policy instruments than the negotiated agreement. Firms that fail to meet their objectives could face higher costs, both in absolute terms and in terms of decreased competitiveness relative to other industry members, in being subject to environmental taxes or strict regulation. This mechanism also works on an industry-wide scale – enacting the 'regulatory threat' behind the negotiation places higher costs or restrictions upon the whole industry, reducing competitiveness relative to firms from abroad or to industries that produce substitute goods.[11] Once more, it is emphasised that suitable monitoring and reporting is essential for compliance checking to work soundly.

2.3 Analyses of negotiated agreements

The analysis of negotiated agreements has, to date, centred on assessment according to the traditional environmental economics criteria of **environmental effectiveness** and **economic efficiency**. In general, this has been manifested following either of two methodologies:

- studies in which negotiated agreements are modelled according to their essential features (as viewed by the researcher), and this model is evaluated in terms of economic efficiency and / or environmental effectiveness; and

- case studies in which a particular instance of a negotiated agreement is examined with the intent to extrapolate conclusions upon the effectiveness of negotiated agreements as a general tool. Few studies have analysed the economic efficiency of negotiated agreements as they are practised.

There has also been limited research into negotiated agreements and their performance according to qualities other than effectiveness and efficiency. As the research community's understanding of negotiated agreements increases and its uptake by public authorities continues, there has been some investigation into which additional criteria may be suitable for analysing environmental agreements.

This section commences with looking at the research into negotiated agreements. Examples of some alternative frameworks for assessing negotiated agreements are also considered. Finally,

[10] In some instances, exclusion from the negotiated agreement (and the concomitant benefits) provides a sufficient incentive for compliance. An example of this is the German agreement for packaging waste.

[11] However, decreased competitiveness of domestic industries is generally an effect that public authorities wish to avoid. This undesired outcome therefore diminishes the credibility of the regulatory threat, and can weaken the negotiating position of the public authority.

some of the limitations and shortcomings of the analyses of negotiated agreements are addressed.

2.3.1 Modelling of negotiated agreements

Some researchers have attempted to use models to describe negotiated agreements (for example, Golombek and Moen, 2002), while others discuss negotiated agreements from a broader, theoretical viewpoint. In their study, Golombek and Moen model an agreement and then compare it to environmental taxes in efficiency and effectiveness. They broadly conclude that their model supports taxes as being superior to negotiated agreements in most cases. However, their model only considered one type of agreement, whereas this instrument is used in a highly diverse way in practice. In addition, the taxes were modelled perfectly (i.e. public authorities know exactly which taxation level gives optimal efficiency; taxation rates were not subject to industry lobbying), which may poorly represent reality. The usefulness of the conclusions of the study are therefore limited.

This study illustrates some of the challenges in modelling negotiated agreements and in analysing this policy measure from a theoretical viewpoint. Such difficulties indicate that modelling may not be the most appropriate means of evaluation. The particular aspects of negotiated agreements that are especially problematic include the following:

- negotiated agreements are diverse, and there is no prototypical form for negotiated agreements;
- potential soft effects (pro-active behaviour, knowledge sharing, innovation etc.) are difficult to include;
- negotiation costs may also be difficult to factor, along with the level of compromise caused by negotiation;
- the model should estimate the case for the 'business-as-usual' scenario; and
- for comparative analyses, models should also reasonably account for the imperfections that occur in putting alternative instruments, such as environmental taxes, into practice.

A further difficulty with modelling for negotiated agreements is that they are often used in a 'policy mix' where they complement other instruments, thereby adding further complication to the model. In such instances, it is perhaps less useful to study the effects that negotiated agreements have on the overall effectiveness and efficiency of the policy mix. It may be more helpful to look at the ways that negotiated agreements may bring other benefits (such as improved acceptance, better industry-authority relations, or enhanced flexibility) to the policy mix instead.

2.3.2 Analysis of negotiated agreements in practice

Although this area of research has been slow to develop – possibly arising from the non-theoretical, non-academic, conceptualisation of this instrument – a significant body of work has accumulated. As stated in the introduction of this chapter, the primary focus has been on environmental effectiveness (OECD, 2003), however other criteria have been examined (discussed in the successive section).

The broad consensus of the literature suggests that negotiated agreements may be less environmentally effective than other policy instruments (OECD, 1999, p. 131). However, this conclusion relies on the assumption that environmental target levels are set during negotiation, and not beforehand. In the Dutch model, where targets are set by National Environmental Policy Plans, the evidence suggests that a high level of effectiveness can be retained (EEA, 1997). It is likely then that environmental effectiveness depends on whether the goals of the agreement are set prior to, or during, the negotiation. Studies on the effectiveness of negotiated agreements should clearly distinguish which type of agreement the study applies to. As a final note on environmental effectiveness studies, it is emphasised that negotiated agreements are an evolving tool, so consequently there may be far fewer instances of goal-setting negotiated agreements in future as their compromised effectiveness becomes widely recognised.

In contrast to studies on environmental effectiveness, far less research has been conducted upon the economic efficiency of practised negotiated agreements. This possibly arises from the difference in effort required between the two criteria. For effectiveness, analysis centres upon how ambitious the target is for the objective in question, and how close the private sector comes to obtaining it. Economic efficiency analysis, on the other hand, is more complicated. Costs of negotiating the agreement, costs to apply appropriate environmental measures, and costs to monitor and enforce compliance must all be accounted for. These measurements are not trivial, and it is not unusual that significant data gaps may compromise the analysis. Moreover, analysis for efficiency is meaningless unless compared with other policy instruments or the 'no policy implemented' scenario: the same evaluation must be applied to the alternative situations as well. Finally, no economic analysis is completely unbiased – different methodologies may produce different outcomes – and this should be accounted for in the evaluation. It is unsurprising that there is 'an almost absolute lack of empirical evidence on economic efficiency' for this tool (OECD, 1999, p. 108).

2.3.3 Other criteria for analysis

The criteria for evaluating policy instruments do not reside purely in the economic dimension. The current emphasis on economic rationalisation, evident in many spheres of the 'developed' world, supports environmental effectiveness and economic efficiency as the pre-eminent factors in evaluating policy instruments. This is reinforced by much of the current literature on policy, written by specialists in the economic field. However, other aspects of negotiated agreements have been recognised as being significant elements in judging their viability.

Paton (2002) voices the need to include some assessment of the equity, or **distributional effects**, of a negotiated agreement. This is of particular concern for this instrument because free-riding may be a specific weakness in poorly designed agreements – industry members may benefit from the avoidance of a new regulation even if they are not active participants of a given negotiated agreement. Paton notes that, to date, studies 'have largely ignored the intra-generational equity effects of voluntary approaches'. In the same paper, Paton also emphasises the need for **transparency** and **openness** in the construction of negotiated agreements. Although he cites some studies in this area, they are all based on modelling the behaviour of industry and public organisations – no practical studies are mentioned. Transparency and openness in practised negotiated agreements remain to be effectively evaluated.

Negotiated agreements should be evaluated in terms of **legitimacy**, along with environmental effectiveness and cost efficiency, according to Mascarenhas (2003). In his study, Mascarenhas describes legitimacy as containing three essential elements: representativeness of stakeholder values, interests and concerns; the establishment of decision-making consensus during the

negotiating process; and a supportive role for the public authority in planning, steering, and implementing the negotiation process and subsequent agreement.[12] This echoes Paton's emphasis on openness and transparency, in terms of seeking acceptance from the wider community.

Several case studies have looked at non-economic aspects of negotiated agreements. Cunningham and Clinch (2005) undertook a study to determine whether negotiated agreements foster **innovation**, using the Irish Packaging Voluntary Agreement. From their research they concluded that negotiated agreements do not necessarily confer greater innovation upon the industry regarding environmental solutions. However, they considered the Irish agreement to have some drawbacks in implementation, and there may have been external factors that contributed to the poor performance of the agreement. Whether negotiated agreements are intrinsically unable to promote innovation or whether the Irish agreement was atypically weak could not be resolved from their work. Lehmann (2004) analysed the German packaging organisation DSD regarding whether its monopoly on managing the treatment of packaging waste was anticompetitive. He concluded that the German situation was not problematic in this regard.

To date, most studies have examined negotiated agreements using only a few (i.e. one to three) simultaneous criteria. As mentioned, environmental effectiveness and cost efficiency are the two most common criteria included. However, the emphasis on these criteria has led to an uneven view of negotiated agreements, especially when so much economic theory favours other policy tools. This favour is hardly surprising – economic instruments, after all, are derived from economic theory. The issue is compounded by the negotiated nature of the agreements – compromises and concessions are to be expected, with economic aspects often targeted. Single dimensional (i.e. economic) analyses of negotiated agreements fail to give due consideration of the advantages that may have been gained in granting economic concessions or greater flexibility to industry.

For policies to be successful other factors need to be addressed and this has led to the development of multiple evaluation criteria for policies (for example, see Field and Field, 2002, pp. 183-193; Hildén *et al.*, 2002; OECD, 1999, pp. 103-117). Few studies on negotiated agreements have made use of multiple criteria evaluation methods,[13] and it is therefore difficult to judge how well these instruments are able to meet the multi-dimensional needs of society. Although several authors have developed key criteria specifically for this tool (notably OECD, 1999, pp. 99-102; Cabugueira, 2001; Neumayer 2000), they have not been used in analysing specific examples in detail. Multiple criteria evaluations may be particularly useful as a way of mapping the performance trade-offs across a range of parameters when negotiated agreements are used.

2.3.4 Challenges in analysing negotiated agreements

The analysis of negotiated agreements is problematic from several viewpoints. Firstly, they are intrinsically challenging to model or explain in theory (see Section 2.3). Secondly, a detailed understanding of their performances, from economic and other perspectives, has onerous data requirements. The implications of these features of negotiated agreements are elaborated upon below:

---

[12] Mascarenhas' concept of legitimacy is developed from a series of answered questions, directed to recent participants in a negotiated agreement procedure in Canada.

[13] However, see Neumayer (2000) and White *et. al* (2004) for recent analyses of negotiated agreements using multiple criteria.

Lack of theoretical basis – negotiated agreements did not arise from theory, and so a theoretical model is of limited use in understanding how these instruments work in practice;

Diversity in practised agreements – there are fundamental differences regarding the major characteristics of practised agreements, so observations cannot be extrapolated to the full panorama of negotiated agreements found in use;

Evolutionary nature – negotiated agreements, as an instrument, are undergoing a continual process of adaptation, based on previous experiences, so that 'best practice' in negotiated agreements may quickly become superseded by more successful approaches;

Lack of 'business-as-usual' data – few cases where negotiated agreements have been employed have had baseline data on environmental performance trends gathered beforehand, thereby compromising any subsequent evaluations of effectiveness for this instrument; and

Performance trade-offs – negotiated agreements imply that a compromise (or exchange) has occurred between industry and public authorities, yet the singular focus on economic aspects of this instrument precludes an understanding of these effects.

These challenges underline the difficulty of employing theoretical models for predicting the value of negotiated agreements. It could be argued that modelling the 'best practice' instance of negotiated agreements would be sufficient, except that the optimal form of negotiated agreement is always evolving, and the optimal form of negotiated agreement may differ as circumstances change. A modelled 'best practice' is therefore of limited use. Furthermore, the models applied to environmental policy measures have centred on economic aspects. The challenges listed above, on the other hand, indicate that the greater insights into negotiated agreements may arise from the inclusion of other criteria into analysis. Going beyond purely economic evaluations of negotiated agreements may be particularly promising in developing a fuller understanding of their strengths and weaknesses, and in explaining why they have become so popular.

2.4 Developing a framework for analysis

In this section, a framework for analysis will be formulated, which will be used to examine the Third Packaging Covenant. This formulation largely consists of establishing a set of evaluation criteria. The nature of the evaluation to be used is multi-dimensional and qualitative, as it is considered that pursuing a more narrow (yet in-depth) analysis neglects some of the key aspects of negotiated agreements. This was alluded to in the previous section.

The criteria that were chosen for this study are laid out below, and are based on the issues discussed in Section 2.3.

- To begin with, and in agreement with the wider literature of environmental policy analysis, the **environmental effectiveness** of the policy will be evaluated. Environmental effectiveness relates to whether or not the policy addresses the ultimate concerns that led to the policy being established. Note that this requires more than just meeting the quantitative targets of the policy, for if targets have been set that are inappropriate for the environmental problems at hand, then the policy is rendered less effective. Thus, there is the question of **policy relevance**, in addition to the **implementation effectiveness**. Policy analysis definitively requires that a policy be assessed according to how well it achieves that which it had been set out to do. Both the intents (i.e. goals) in constructing the policy and the success in meeting these goals require consideration for analysis.

- The **economic efficiency** of an environmental policy relates to the overall costs borne by society through its formulation and implementation. Environmental economic theory dictates that the costs to society as a whole are a necessary element for evaluating environmental policies: cost inefficiencies are viewed as a loss in societal wellbeing, or as a misallocation of limited economic resources. Efficient environmental policies are therefore desirable as they maximise the resources available for meeting the various other challenges faced by society. In the present analysis, examination of the economic efficiency will be strictly qualitative.

- How the costs and benefits of environmental policies are distributed amongst the diverse sectors of society is also an important factor for evaluation. Thus the **equity** or **distributional effects** are included in the analysis framework. However, while the cost efficiency and environmental effectiveness may be judged according to well-defined economic and policy theories, equity considerations have a normative component. Just what forms of cost and benefit distributions are equitable, and how is equity achieved while other needs must also be met? At this point it may be problematic to imply that a given distribution is more 'correct' than another, yet equity considerations undoubtedly affect a society's normative response to a policy implementation, which is discussed below.

- A concern for equity implies that a level of public scrutiny can be applied to the policy, as it can be argued that equity is defined by the values that predominate in an open society. Hence, the satisfaction of the citizenry – or **public acceptance** – of a policy tool is a critical parameter. This is essential to consider in an open society, as government policies should ideally be representative of societal values. This representativeness may be reflected in how well the policy is accepted amongst the interested groups within society. It is stressed that the capability of society in issuing its acceptance strongly depends on its access to information.

To summarise then, the following criteria will be analysed to determine the overall appropriateness of the policy tool in question:

- the environmental effectiveness in meeting the policy's objectives, including policy relevance and implementation effectiveness;

- the economic efficiency in applying the policy tool;

- the distribution of costs and benefits flowing from the policy (including an analysis of free-riders); and

- the public acceptance of the policy instrument from different stakeholder groups (which requires an understanding of the information access).

Significantly, this list of criteria incorporates elements that are environmental, economic, and social. It can perhaps be likened towards a critique of the sustainability of the policy measure examined. As with assessing the sustainability of projects and proposals, there needs to be an understanding of how an emphasis placed on one of the criteria may influence the others. That is, the dynamics of how the policy performs with respect to each criterion is important, but so are the interactions between each criterion. Efforts have therefore been made in this assessment to see how prioritising performances along one dimension may constrain the performances along others.

In scrutinising the Covenant according to these criteria, the procedural factors and policy decisions that may have had significant roles in shaping the observed outcomes will be discussed.[14] This part of the assessment is critical in understanding why the observed outcomes occurred, and how unwanted effects may be avoided (Section 6.2).

The next chapter briefly looks at environmental policy setting in the Netherlands, and then focuses on the policies that have been applied in that country in mitigating the impacts from packaging waste. Particular emphasis is placed on the three Covenants, and the more recent Packaging Decree. Then Chapter 4 looks at the delineation of responsibilities within the third Covenant, and the operational functioning of the Covenant is described in detail. In Chapter 5, the research framework laid out in this chapter is applied to the third Covenant. It is also applied to the Decree in order to gain an understanding of the policy shifts that have occurred since the termination of the Covenant. Finally, a discussion of the performance of the third Covenant is presented in Chapter 6, with conclusions summarised in Chapter 7.

[14] In this thesis, a deliberate distinction is made between *criteria* through which policy tools may be evaluated; and *factors*, which are features of the policy tool and its context which may affect the observed performance of the tool. In the literature examined, there is a confounding tendency to label some factors as criteria. Even if a policy feature proves to be deciding factor for the success of that policy, this does not make that feature a criterion for evaluation.

3 Background information on packaging waste policy in the Netherlands

3.1 Introduction

In the Netherlands, the central policy tool used to manage the environmental impacts from packaging waste in recent years has been the Covenant. Although there remained direct legislation in the background since 1997, which served the dual purpose of meeting the country's requirements under EU Directive 94/62/EC and providing an instrument to regulate non-signatories, it was the Covenant that guided the every-day activities of industry concerning packaging waste. The period of Covenant usage for packaging waste impacts began in 1991 and concluded in December 2005. Three Covenants were signed over this period.

In this chapter the history of packaging waste instruments in the Netherlands is laid out. It starts with briefly outlining the particular characteristics of the Netherlands' society that favours the use of environmental covenants, and continues by describing the early decisions in establishing the First Packaging Covenant in 1991. From there, the key developments that led to the later forms are recounted. This chapter concludes with a description of the current policy make-up in the Netherlands since the completion of the Third Packaging Covenant in December 2005.

This chapter is not intended to provide an exhaustive description of the three Covenants, but to focus on those aspects that have been critical issues for industry and for the government, and those aspects that have undergone significant changes over time. As stated in the Scope of this thesis work, the issues of interest are packaging and packaging litter reduction; and the recycling of packaging waste. The literature cited provides further detailed information on the Covenants if sought.

3.2 Background for policy-making in the Netherlands

Before looking at the key decisions and developments that pertain to packaging waste policies in the Netherlands, it is helpful to briefly describe two of the background elements that may shape them. In the following sections are presented some facets of Dutch decision-making; and the Dutch approach to EPR.

3.2.1 Consensus decision-making and the polder model

Governmental decision-making for public policy in the Netherlands is characterised by the use of discussion between the government and different sectors (such as employer groups and unions) with the aim of reaching common agreement, known as consensus decision-making. This approach is termed the 'polder model' when applied to the Netherlands. It is so-named from the notion that in order to keep viable those parts of the country that are below sea level (the polders) requires different sectors, different classes, and different social groups to work in concert to meet common goals.

The Dutch society can itself be considered a polder in its sensitivity to external factors. For example, as a smaller European economy that is highly reliant on foreign trade, the Netherlands has been described as being very sensitive to global economic conditions. As a response, it has become necessary for different interest groups to negotiate, make

compromises, and co-operate for the greater benefit of Dutch society (The Economist, 2002). Thus, the 1980s saw the government, unions and employer groups proactively discuss solutions to the economic difficulties at the time, and to prevent further industrial deterioration. This approach, based on representation from government and interested, informed social groups, now typifies decision-making in the Netherlands. In the realm of environmental policy-making, this feature has been dubbed the 'green polder model' (VROM Council, 1998, p. 15), acknowledging its importance in seeking outcomes that broadly satisfy government, relevant industries, sensitive social groups, and the broader community.

3.2.2 Extended Producer Responsibility

A core concept in the approach of the Dutch government towards waste policy is extended producer responsibility (EPR). Essentially an application of the 'polluter pays' principle, it requires that some or all of the costs associated with the responsible treatment of a product's waste be placed on the marketers, manufacturers, or other actors in the production chain of that product. One major outcome of this is that the cost is transferred from members of society that may have had no role in the impacts caused by the waste. EPR is therefore more environmentally equitable, compared to traditional arrangements wherein the government (or even volunteers) took responsibility. Another major outcome is that the internalisation of the social cost of waste motivates the production chain to minimise its impacts through changes in production and product design. Actors in the production chain are in the best position to know which strategies will be the most suitable for reducing waste impacts (VROM, 2001b). To date, EPR has been applied to a range of products in the Netherlands, including batteries, end-of-life vehicles, car tyres, and waste from electronic and electrical equipment. In some cases, the government has entered into a Covenant with industry to implement EPR, but in other cases, EPR has been enforced with mandatory regulations.

A significant feature of the Dutch usage of EPR is that different levels of responsibility are set for industries, depending on the types of waste being handled. In this way, EPR is a guiding principle; but its implementation is case-specific. For example, in contrast to packaging waste policy instruments in other jurisdictions (such as Germany), the Dutch packaging Covenants retained the municipalities' traditional responsibilities for the separate collection of packaging waste from households. The effects of adopting this 'light' version of EPR will be discussed in Chapter 5.

3.3 Policy Implementations for packaging waste

3.3.1 Early developments

Efforts to specifically confront waste impacts that arise from packaging began in the 1988 Memorandum on the Prevention and Recycling of Waste, where this waste stream was identified as a priority (VROM, 2001). In the following year, the Government released the National Environmental Protection Plan (NEPP) which outlined the major environmental objectives for the country, including those set for packaging waste. Significantly, the Plan also confirmed the use of negotiated agreements as the preferred method of achieving its goals, in accordance with the 'polder model' of Dutch decision-making. These negotiated agreements, or Covenants, were professed as a means of placing extended producer responsibility (EPR) upon the product supply chain, while still granting a level of flexibility towards the manner in which the objectives should be obtained.

At the time the environmental movement in the Netherlands also held considerable momentum. From the movement's perspective, packaging waste was a concern in terms of resource usage, impacts from landfill, and the generation of litter. Their preferred solution included the extension of the deposit system that had already been established for large refillable beverage containers, so that smaller containers were also covered. This, they felt, would provide sufficient incentive for consumers to return beverage containers to the point of sale, rather than discarding to their general household waste or littering.

Industry viewed this as a significant increase in their costs. In particular, the retail sector strongly resisted the approach, based on the diversion of resources (such as shop floor space and labour hours) that a deposit system would entail. The direct imposition of such a system was also viewed as an unwelcome interference in the daily activities of retailers. For these reasons and others, the supply chain forwarded their preference for negotiating a Covenant for packaging waste instead of having a deposit-refund system imposed through legislation. They anticipated that a Covenant would allow industry to have a greater say in the policy instrument developed, and would confer greater freedom in the measures taken while still fulfilling the outcomes sought by the Ministry.

On the basis that the NEPP favoured the use of Covenants for achieving its goals, and that the private sector demonstrated their preference for this instrument, the Ministry agreed to commence negotiations to establish the first Covenant for packaging waste.

3.3.2 The First Packaging Covenant

The First Packaging Covenant, agreed upon by the Dutch government, firms in the packaging supply chain and the association for local governments, identified the producers and importers of packaging as the responsible actors for meeting the requirements of the Covenant. Box 5 clarifies which actors are meant by 'producers and importers'. This sector was represented by the branch organisation called the Foundation on Packaging and the Environment (FPE).[15] The duty to collect and transport the household waste to recyclers remained with local government, while packaging waste generated by industry had to be dealt with by the waste generating company itself. The performance objectives of the First Packaging Covenant, based on the Memorandum, were as follows (OECD, 1998):

- there should be no increase in the amount of packaging entering the Dutch market;
- the total amount of packaging entering the Dutch market should be reduced to the 1986 level by the year 2000, with a further decrease of 10% if possible (interim targets had also been set);
- the landfilling of packaging waste will be eliminated;
- reusable packaging should be used in preference to one-way packaging where possible; and

[15] The representative organisation for industry has undergone changes in name as new Covenants have been entered into. In the second and third Covenants, industry was represented by the organisations SVM and SVM·Pact. Although there is no Covenant currently in place, the largest representative organisation for industry is called Nedvang. This organisation can be considered the dominant successor to SVM·Pact.

- the recycling rate for disposable packaging should reach 60 % by the year 2000 (with interim targets in place), with specific targets set for each of the major packaging waste materials (see Table 3-1).

In addition, the Covenant also specified that industry substitute, or reduce by other means, the levels of hazardous materials (such as heavy metals and solvent-based paints) and non-recyclable materials used in packaging.

The first Covenant aimed to promote the use of reusable ('multiple use') packaging over one-way ('one time use') packaging except where it could be proven, through environmental and economic studies, that the latter was more viable and more benign to the environment. Further knowledge in this area was to be obtained through analyses performed by independent institutes. As a result, throughout the 1990s, many life cycle assessments (LCAs) and market economic analyses (MEAs) were undertaken to determine which type of packaging was more appropriate. Very few cases at the time were able to show conclusively that reusable packaging could be simultaneously better for the environment while retaining market competitiveness.[16] For certain types of beverage container – notably beer containers and large soft drink bottles – the studies clearly favoured the continued use of refillable bottles, which remained the dominant packaging type for these products.

According to the OECD (1998) analysis performed on the first Covenant, this agreement was successful in obtaining its interim targets in 1994 with the exception of its plastic recycling targets. This is despite the lack of a 'safety net' against non-signatories provided by legislation. However, in 1994, the European Parliament and Council Directive 94/62/EC on packaging and packaging waste ('the Packaging Directive', see Appendix for its critical features) entered into force, requiring implementation in the Member States. As the Netherlands did not have any national laws on packaging waste, irrespective of the successes of the first Covenant,[17] the country necessarily responded by developing such legislation in 1997. In the same year, VROM and the packaging supply chain took the opportunity to renegotiate for a new Covenant.

Box 5. A clarification on 'producers and importers'

For clarity, producers and importers – the main responsible parties in the packaging chain as defined in the third Covenant – are described below, using the Covenant's language.

A producer or importer does one of the following in the course of their work or business:

1. first puts substances, preparations or other products in packaging on the market;
2. first imports substances, preparations or other products in packaging and disposes of the packaging in the Netherlands;
3. commissions a third party to place his / her / its name on the packaging of substances, preparations or other products and puts them on the market; or
4. first supplies packaging to third parties that is intended to be added to substances, preparations or other products when they are supplied to the user;

[16] On this note, it is emphasised that the conclusions drawn from LCAs can be somewhat variable, depending on the assumptions made, boundaries drawn, and methodologies followed during the analysis. A recent review of LCAs made for comparing recovery and disposal options for paper and cardboard highlights this (EEA, 2006, pp. 51-54).

[17] The first Covenant also had more stringent targets than the Packaging Directive in 1994.

3.3.3 The Packaging and Packaging Waste Regulations

The Packaging and Packaging Waste Regulations ('the Regulations') entered into force in 1997, and were designed to meet the country's obligations as an EU Member State while retaining the flexibility of the Covenant approach. Private sector actors who had duties under the Regulations could choose to fulfil those duties individually, or as part of a Covenant.[18] It is clear from the Regulations and their accompanying explanatory notes that the government preferred to continue with using a Covenant as the central policy tool to manage the issue, due to the success of the first Covenant.[19] Part of this may be explained in the higher recycling and prevention targets that the government could demand in a Covenant, in exchange for the flexibility granted to industry. (All of the recycling targets were significantly higher in the first Covenant than in either the Directive or the Regulations, which have identical targets.) Moreover, the Covenants also contained concrete quantitative objectives in packaging waste prevention, a requirement that was absent in the community-level and Dutch laws.

The Regulations' notes detail the separate duties placed on different actors in the Netherlands. These responsibilities are worth describing here, as they are part of the principles that underlie the Netherlands' approach to packaging waste, and are independent of the policy tool applied.

Regardless of whether industry entered into a Covenant or whether individual implementation was undertaken, the Regulations placed ultimate responsibility on producers (i.e. those that furnish a product with packaging) and importers (i.e. those that import a packaged product) to meet the packaging waste objectives.[20] The reasoning for this allocation of responsibilities, or designation of the 'standard addressee' to use the Regulations' language, is that the producer or importer is the actor in the packaging supply chain that is best positioned to shape the prevention and recycling activities that occur. However, central to the Netherlands' approach is the application of 'chain responsibility' wherein it is acknowledged that other actors in the packaging supply chain should take reasonable measures to allow the targets to be reached. For example, manufacturers of packaging can select more recyclable raw materials. Ultimately, it is up to the producers and importers of packaging, assisted by government where appropriate, to provide the necessary conditions for these other actors to perform their parts effectively.

The producers and importers held responsibility for meeting the recycling targets,[21] which would largely be facilitated by stimulating recycling, and by innovations in packaging design. Costs incurred by this responsibility could be transferred down the supply chain to the consumer, to the extent that market conditions permitted it. As a final note on the allocation of responsibilities, it is emphasised that the collection and transport of household packaging waste remained within the control of local government under these Regulations. Thus, for household waste collection, local governments were expected to collect separated paper and

---

[18] A third alternative for individual companies, in which they form a group and collectively meet the requirements of the Regulations in a 'joint implementation', is also possible.

[19] See, in particular, Section 3 of the Explanatory Notes to the Regulation.

[20] The situation is more complicated for users of so-called 'last-minute packaging', such as disposable shopping bags or cardboard coffee cups. In such cases, the retailer is responsible for its prevention. However, the party that provides the retailer with the packaging is responsible for recycling and recovery duties. This is simply because this party is in a much better position to effect design change to improve recycling and recovery of the packaging material than the retailer.

[21] The notable exception for financial responsibility is for packaging waste generated by industrial activities, wherein the disposer of the waste must pay for its treatment. However, producers and importers are obliged to ensure that recycling (or recovery, in the case of plastic packaging) is an economically viable solution, with a view to obtaining the recycling targets.

board packaging and glass packaging that were sufficiently free from contamination. The costs to segregate and to arrange the separate collection of packaging waste generated by industry fell to the disposers of that waste.

The Regulations were similar to both the Directive and the first Covenant through being non-specific in terms of the particular activities that producers and importers were expected to undertake. That is, these actors were given performance objectives, but not procedural requirements. In essence, producers and importers were required to:

- fulfil their recycling and recovery objectives;
- undertake measures for qualitative and quantitative packaging waste prevention;
- notify the Ministry how they intend to perform these tasks, including how they will finance them and what the expected results will be; and
- periodically report on the success of these measures.

As stated in Article 2 of the Regulations, producers and importers could gain exemption from these individual duties via a Covenant or by affiliating with an organisation that would perform them on their behalf. In order to avoid disrupting the ongoing collective practices undertaken by industry, a new Covenant between the Ministry and SVM·Pact was signed shortly after the Regulations entered into domestic law.

3.3.4 The Second Packaging Covenant

The Second Packaging Covenant was signed on 15 December 1997. In this Covenant, the central goal was to reduce the amount of packaging waste that went to landfill or that went to incineration without energy recovery. The packaging waste prevention measures and recycling activities, which had their own targets, were the main strategies by which this goal would be met. The Covenant was structured in parts – an overall 'umbrella' covenant, and six sub-covenants – in order to separate the duties of different actors.

The umbrella covenant covered the overall recycling and prevention targets for the whole packaging industry, as well as monitoring requirements, the composition of the Packaging Committee,[22] and the resolution of disputes. One sub-covenant related to the specific duties set for importers and producers to improve reuse, recycling and prevention efforts. The remaining five sub-covenants set the duties and performance objectives of the packaging supply chains (represented by five distinct branch organisations) for the five main packaging waste streams: paper and cardboard; metals; glass; plastics; and wood. For the paper and cardboard and the glass sub-covenants, the Association of Netherlands Municipalities (VNG) was also a signatory as municipalities held the responsibility to separately collect and transport these waste materials.[23] Wood is generally not used in consumer packaging. For the metals sub-covenant, separate collection of metal packaging waste was deemed unnecessary for the target to be met. And for plastics, the particular difficulties of recycling household packaging (see Box 7) suggested that it would be more efficient to focus on industrially generated plastic packaging for recycling instead. Thus, for these packaging waste streams – wood, metal, and

[22] The Packaging Committee was a panel of experts chosen to evaluate the performance of the Covenant and to ensure that the parties to the Covenant met their obligations. It was later renamed to the Packaging Commission.

[23] For the municipalities, collection targets were set for separated and uncontaminated waste from these materials.

plastic – separate collection by municipalities has generally not been undertaken and the participation of VNG has not been required.

Regarding prevention, the packaging chain was expected to reduce the amount of packaging entering the market in 2001 by 10 % relative to the packaging levels of 1986, corrected for changes in GDP. In practice, this does not mean that the absolute level of packaging actually decreases, as the growth in GDP over that period was significantly more than 10 %. However, the target, if met, would signal a partial decoupling of packaging from economic growth. This was less stringent than the equivalent target in the first Covenant, which did not make allowances for economic growth. The environmental movement, as a result, was generally disappointed with this alteration (van Duin, 2006).

As illustrated in Table 3-1, higher recycling rates were expected for all of the waste materials in comparison to the first Covenant. At the conclusion of the second Covenant in 2001, it was clear that some targets had been met without difficulty, some targets may have been met, and some targets were not met with satisfaction. Nonetheless, industry and the government agreed that continued improvement in packaging waste was still possible under a Covenant setting, and so a third Covenant was settled in December 2002.

3.3.5 The Third Packaging Covenant

This Covenant retained the main purpose of the second Covenant, i.e. to reduce the amount of packaging waste entering landfill or being incinerated without energy recovery. Specifically, the target set for the Covenant was to have no more than 850 kilotons of packaging waste sent to landfill or incinerated without recovery in 2005. Similar to the previous Covenant, the third Covenant also made use of an 'umbrella covenant', with sub-covenants. The same sub-covenants were in place, with the addition of a seventh sub-covenant concerned with litter from packaging waste. This is because it was felt that litter was a major problem arising from packaging waste and, despite the environmental improvements yielded by the previous Covenants, it had to be confronted directly. So, along with the use of recycling targets, there was the added expectation that the volume of bottles and cans in litter be reduced by 80 % by the end of 2005, relative to the volume that was estimated at the time of the Covenant (about 50 million cans and bottles). This figure of 80 % was chosen because it was felt that this would be the level of reduction brought about by the introduction of a deposit-refund system for small drink containers made for single use.[24] In other words, for industry to avoid this system (once more), it had to demonstrate that it could meet the expected performance level of the system via other measures.

The recycling targets for the various waste materials were adjusted in different ways, based on the performance levels obtained in the previous Covenant.

- The previous wood recycling rate was easily achieved, so the target was increased significantly.

- For metal recycling, the target remained at 80 %. This level was retained because the limiting factor for metal recycling was the number of incinerators in the Netherlands, which is independent of the practices of the metal packaging chain.[25] It was felt by the

[24] This system was favoured by the Ministry and by the environmental movement.

[25] In the Netherlands, households normally do not separate metal packaging from general waste – metals are recovered from incinerator ash residue.

Packaging Committee (2001) that higher recycling rates for metal were most likely to be achieved by extending the number of incinerators installed with metals recovery infrastructure.

- The paper and cardboard recycling target was decreased by 10 %, but this is misleading. In the second Covenant, the target of 85 % was applied for all paper and cardboard collected as waste separately; in the third Covenant, the target of 75 % applied to all paper and cardboard – including waste material that would not be collected due to high levels of contamination (such as tissues, paper towels and so on). In practice, no change was anticipated in terms of effort required to meet the new goal.

- The targets for glass under the second Covenant were deemed as being suitable, and therefore were not altered for the third Covenant.

- The recycling of plastics has remained difficult to achieve in the Netherlands under the present approach – especially from households – so the modest target of the second Covenant was only slightly raised in the third Covenant.[26]

Regarding prevention, a new approach to setting targets was applied. The third Covenant required that the percentage growth in packaging entering the market should not exceed two-thirds of the percentage growth in GDP achieved since the base year (set at 1999). So, during periods of low economic growth, the prevention targets are relatively undemanding. Nonetheless, this method still maintains the goal of gradually decoupling packaging volumes from economic growth.

Like the previous Covenant, performance levels were mixed. In the case of the new sub-covenant on litter, monitoring problems were insurmountable and therefore the measures taken under this agreement could not be evaluated (Packaging Commission, 2005, pp. 8-9). Moreover, the main targets of the Covenant were not satisfied. The overall recycling rate had levelled off at about 62 % for some years, significantly less than the required level of 70 %. Prevention of increased packaging entering the market was also unable to be restricted to two-thirds of the GDP growth over the same period. Thus, over the final years of the Covenant, there was not an extensive reduction in the amount of packaging waste going to landfill or being incinerated without energy recovery. Regarding the recycling of different packaging material, while the targets for wood and metals were met comfortably, performances for the other materials appeared to be levelling off at rates significantly below the goals set. The next chapter discusses the performance of the third Covenant in detail.

At this point, it was felt by the Ministry that the packaging waste goals that were sought were no longer attainable by the approach taken. Although the Covenant period from 1991 onwards was able to deliver solid improvements, it was clear that the performance of the Covenant was stagnating in its final years. From the viewpoint of the Ministry, the objectives of the Covenant could be reached if a different policy tool was used. For this reason, a new decree was drawn up to regulate packaging (which included paper and cardboard waste other than from packaging). The Ministry also used this opportunity to install other packaging waste policy objectives that could not be finalised through negotiation.

---

[26] In the third Covenant, industry was also expected to undertake the recovery of plastics (i.e. use as alternative fuel source) to the level of 15 %. A critical problem with the Covenant is that the plastic packaging sub-covenant covers only a minority of the actors involved in the plastic packaging chain. It is therefore very difficult to extrapolate the performance of the Covenant signatories to the entire sector. Typically, the performance figures reported are the lower estimated recycling rates for this material. The 'true' level of plastic recycling cannot be reported with confidence.

3.3.6 The Packaging, Paper and Card (Management) Decree

The Packaging, Paper and Card (Management) Decree ('the Decree') was drawn up on 24 March 2005. Currently, only part of the Decree has entered into force since 1 January 2006, as the implementation of the remaining Articles is still being discussed in the Dutch Parliament. The Decree repeals the previous Regulations that were set in 1997, and no packaging Covenant is currently active. The use of Covenants is not endorsed in the Decree, but as in the Regulations, actors in the packaging chain that have obligations may affiliate with an industry organisation that agrees to act on its behalf. The Decree introduces other significant changes to the way in which packaging and packaging waste is regulated in the Netherlands, which are outlined below.

Collection and transport responsibilities

Foremost among the changes to the way in which packaging waste is managed in the Netherlands is the transfer of financial responsibility for the collection and transport of this waste from municipalities to the producers and importers. This outcome was sought as a means of extending producer responsibility beyond the facilitative role previously required of the packaging chain, with respect to recovery. In addition, it brings the Dutch policy closer to the forefront of EPR in the European Union. The Ministry sees several benefits to this decision, arising from the internalisation of collection and transport costs. Costs are transferred directly to the packaging supply chain, and potentially, the consumers of packaging. The Ministry views this as a more equitable arrangement. In turn, these costs could drive greater efficiency in collection and transport, as industry is likely to have greater pressures for cost efficiency in comparison to municipalities. Competition in collection and transport is therefore promoted. Finally, transport and collection costs may now become considerations for design change for new packaging products. In terms of practically arranging for this transfer of costs to industry and for settling the many issues associated with household waste collection, the Decree encourages bilateral agreements between the municipalities and the appropriate supply chain branch organisations.

In a Covenant setting, this cost internalisation was problematic from the viewpoint that neither the packaging industry nor local governments could view it with favour. For industry it represents a transfer of costs that it would prefer to avoid. For local governments, it represents a transfer of bureaucratic control and / or applies market pressures to an activity that was traditionally free from drivers towards efficiency.

Recycling targets for beverage containers

The new Decree also saw the introduction of new recycling targets for some packaging material types (see Table 3-1 and Table 4-2). One of the problems with the Netherlands' Regulations and Covenants (prior to the Decree) was that the mandatory use of refillable containers for beer, and for soft drink and water in volumes of one litre or more, was deemed anti-competitive by the EU. The Decree therefore provided the opportunity to correct this, by allowing the introduction of 'one time use' containers for these products. As the Ministry did not want the influx of 'one time use' containers to reverse the environmental benefits of refillable containers, it undertook a study to determine the effects of these new containers. In the study, it was determined that if certain recycling rates were achieved for the different beverage containers used in the Netherlands, the impacts of the new 'one time use' containers would be offset. These prescribed recycling rates for beverage containers (along with the rates for different packaging materials) are presented in Article 4 of the Decree. Thus, the

expectations placed on the beverages industry have increased significantly, and this industry must accelerate its initiatives for recycling to avoid the imposition of a deposit-refund system.

The Ministry envisages two other major advantages of these new targets. Firstly, the targets for plastic beverage container recycling may finally lift the recycling rate for plastics to more acceptable levels than seen in the Covenants.[27] Secondly, were these recycling targets to be met, it would require significant reductions in the amount of beverage containers found in litter. Unfortunately, if these targets aren't met, the fewer refillable containers (which carry a deposit) relative to the new disposable bottles (which currently don't carry a deposit), are likely to make the litter problem worse.

The Ministry views this dilemma as being immediately resolved by the establishment of a deposit-refund system for all beverage container types. As previously discussed, the actors in the packaging supply chain remain strongly opposed to this. Such a scheme is therefore politically sensitive. The result is that those Articles[28] in the Decree that dictate the use of a deposit system are not currently in force, and their deployment into legislation is still under debate.

3.4 Concluding Remarks

In this section, the fundamental aspects of Dutch society enabling a Covenant for packaging waste were outlined in brief. From this starting point the policy instruments, including the Covenants and regulations, and the drivers that push policy change in the Netherlands were reviewed. Two such drivers have been the enactment of the EU Packaging Directive, and the continuously escalating expectations placed on the packaging chain by the Dutch government. The result has been a progression of Covenants in which the obligations of the packaging chain have steadily increased, followed by the final termination of the Covenant period, induced through the Decree. This Decree signalled that the Covenant was no longer delivering environmental improvements that were satisfactory to the government (discussed in detail in Chapter 5), and that a different policy approach was required.

In the next chapter the obligations that were allocated in the third Covenant, and their ramifications, are examined in detail.

---

[27] The reuse of refillable bottles does not contribute to the performance figures for recycling, and so the benefits of using this type of packaging are 'hidden'.

[28] That is, Article 8 and the subsequent Articles that refer to it.

Table 3-1: Targeted recycling rates under different laws and Covenants.

		Recovery and Recycling Targets (%)						
Year	**Document (target year)**	**Overall Recovery (%)**	**Overall Recycling (%)**	**Metals Recycling (%)**	**Glass Recycling (%)**	**Paper and Board Recycling (%)**	**Plastics Recycling (%)**	**Wood Recycling (%)**
1991	First Covenant (2000)	-	60	75	80	60	50	-
1994	Directive 94/62/EC (2001)	Between 50% and 65%	Between 25% and 45%	15	15	15	15	15
1997	Packaging and Packaging Waste Regulation (1998)	65	45	15	15	15	15	15
1997	Second Covenant (2001)	65	65	80	90	85	27 to 35	15
2002	**Third Covenant (2005)**	**73**	**70**	**80**	**90**	**75**	**30**	**25**
2004	**Amending Directive 2004/12/EC (2008)**	**60**	**Between 55% and 80%**	**50**	**60**	**60**	**22.5**	**15**
2005	**Packagings, Paper and Card Management Decree (2006)**	**70 (includes wood)**	**65 (includes wood)**	**85**	**90**	**75**	**27**	**25**

4 Responsibilities under the third Covenant

The Covenants served as documents in which the responsibilities for the various private sector organisations and the different levels of government were delineated. Thus VROM was a signatory to the third overall Covenant and each of the sub-covenants, as its ministerial duties extended to each of the individual sub-agreements found in the Covenant. For other actors, such as the Association of Netherlands Municipalities (VNG), the branch organisation for the packaging chain (SVM·Pact), and the individual material packaging chain organisations and material recycling organisations, their presences as signatories depended on whether or not they were required to play an explicit role in the agreement (as depicted in Table 4-1). This chapter examines the duties held by each of these organisations (and the sectors that they represented) in detail. In addition, the performances of each of the sub-covenants are also briefly reviewed, to provide background information necessary for the analysis in the chapter that follows.

4.1 Packaging waste from the KWDI sector

For packaging waste that was disposed of by offices, shops, services and industry sector (KWDI sector), each of the material sub-covenants broadly followed the same structure. The financial and organisational responsibility for collection and recycling fell to the disposer of the waste. This was encouraged by a number of mechanisms. Firstly, in the Netherlands, industrially generated waste is banned from being sent to landfill; and packaging waste is also banned in this manner. Secondly, the landfill tax in the Netherlands is prohibitively high, making disposal to landfill an unappealing option (Bartelings *et al.*, 2005). Box 6 sums up the present situation for landfill in the Netherlands. Thirdly, many private sector companies are mandated to segregate waste according to different categories – including material type – to satisfy the requirements of their environmental permits.[29] And finally, some waste streams in the industrial sector, if offered in sufficient volumes and without excess contamination, can be sold to scrap dealers as an additional revenue stream. Thus, during the Covenant period, there were many incentives for private sector companies to segregate their wastes and have them collected accordingly. During this period, the main responsibilities of VROM and the packaging chain sub-branch organisations were to facilitate the recycling of packaging waste through information programmes.

Box 6. Landfill in the Netherlands

Regulation of landfill is governed by a number of instruments in the Netherlands, and it began with the adoption of Lansink's Ladder in 1979 (VROM, 2001), where disposal to landfill was identified as being the least preferred option. Since that time, numerous bans on different waste types have been implemented (VROM, 2001a), including bans on combustible waste; recyclable waste; and untreated municipal waste. Furthermore, the permit scheme as described by the Dutch Environmental Management Act (1993) can be used to direct industrial generators of waste to take prescribed measures in handling their waste, thus reducing their waste output to landfill. Finally, a tax on waste being sent to landfill was enacted in 1995, and has been increased incrementally. The Dutch landfill tax is presently the highest in the EU at 85 euro per tonne.

The combined effect has been to produce very low landfill rates in the Netherlands. In 2003, only 6 % of household waste was sent to landfills (Bartelings *et al.*, 2005).

[29] This is covered in Article 8.40 of the Dutch Environmental Management Act (1993).

4.2 Packaging waste from households

The material sub-covenants are generally similar to each other in terms of how they function for household packaging waste. However, the presence of some differences warrants their individual discussion. In particular, separate collection organised by municipalities was required only for paper and cardboard packaging waste (which was collected with all other paper and cardboard waste from households) and glass packaging waste. Under the Decree the financial responsibility for this collection is transferred to the packaging industry, although it is expected that the municipalities will retain some organisational control. Another notable difference between the packaging material sub-covenants is that in some cases (such as glass, and paper and cardboard) the industry organisation for recycling is the same organisation that oversees the packaging chain, whereas in the remaining cases the recycling and packaging sectors are overseen separately. In this section, the delineation of responsibilities for packaging waste derived from households is briefly described. Each material section is concluded with the most recent findings of the Packaging Commission upon the performance of the Covenant with respect to each packaging material, as described in Packaging Commission (2005). Detailed discussions on the performance of the Covenant in recycling is withheld until Chapter 5.

Note: The sub-covenant on wood packaging did not cover waste from households, because its volume generated by this sector was negligible compared to the KWDI sector, over the Covenant period. The sub-covenant for this material is therefore omitted from this section.

4.2.1 Metals

The private sector signatories to the metal packaging sub-covenant were the organisation for metal recycling companies, Vereniging Metaal Recycling Federatie (MRF), and the branch organisation for the metal packaging supply chain, Stichting Kringloop Blik (SKB). Within this sub-covenant, financial and physical responsibilities for metal packaging recycling were allocated to MRF, as recycling is the core business activity of its companies, from which they generate profit. SKB was required to promote recycling in the industrial sector, while producers and importers within SKB were required to make their packaging amenable to recycling.

Unlike many other developed countries, metal packaging waste from households is not separated at source, and there is no intent for this to change. Instead, the municipality (or a contracted waste management firm) collects metal packaging waste commingled with general household waste. Metallic waste is separated at an incineration facility, either before or after incineration. This waste is then sold to waste collectors or scrap dealers, who can then sell to metal processing companies. Thus, the market for scrap metal essentially drives the recycling of metal packaging: demand ensures that there are sufficient actors at each step of the recycling chain, and permits the installation of separation infrastructure at incineration plants. Under the sub-covenant, in the unusual case of chain deficits, the MRF had to ensure that the municipality does not suffer from any associated financial losses. For their part, the MRF also had to agree to accept all metal packaging waste from incineration companies, so long as they met the quality criteria outlined in Annex I of the sub-covenant.

The Covenant approach was very successful with metal packaging. SKB and MRF consistently met the recycling targets that were set. This was aided by the positive market for this material, and by the relative ease with which it is separated from general household waste and contaminants. The main obstacle for improving the recycling performance, as recognised in the annual report of the Packaging Commission (2005), has been the shortfall in incineration

capacity in the Netherlands. Although packaging and commercial waste is banned from being landfilled, this practice is still permitted where there is a lack of capacity for alternative disposal and treatment options. However, the industry organisations SKB and MRF do not have the responsibility to ensure that there are enough facilities for recycling; this role has been allocated to the government.

4.2.2 Glass

Glass recycling was directly managed by a sub-covenant between the branch organisation, Stichting Kringloop Glass (SKG), for producers of glass and glass packaging, collectors of glass for recycling and those that reprocess collected glass; and the Association of Netherlands Municipalities, (VNG). Fundamentally, the agreement stipulated that municipalities must take financial and organisational responsibility[30] for the collection of glass packaging from households, and their transport to a nearby transfer point.[31] At the transfer point, a member of SKG then had to accept responsibility for the glass packaging waste, and the material then entered the private sector for reprocessing and use as raw material in the glass industry. Municipalities were also responsible for the physical transfer of the collected glass, usually held in a local bottle bank, into the private sector collection vehicles.

As in the case with metal recycling, the collection company was obliged to take all collected packaging that met the quality standards contained in the sub-covenant. Generally speaking, the private sector was permitted to charge the municipality for any contaminants in the glass that are not inherent to glass packaging. In addition, the private sector could require that up to 50 % of the collected glass be separated by colour, to meet the needs of the glass manufacturing market.

The collected glass, provided that it was free of contamination, was usually positively priced. Members of SKG therefore paid the local municipality for it, offsetting the local collection costs. In some cases, municipalities used private sector contractors for their collection and transport duties, which could be the same company that took responsibility for the material for transfer to reprocessors, etc. In this situation, the municipality is not responsible for any extra costs beyond transport and collection.

The glass packaging sub-covenant was initially very successful, but in recent years the recycling rate has remained constant at about 75 to 80 %, despite the objective of 90 %. In Packaging Commission (2005), SKG said that the problem lay with inadequate collection by municipalities, but did not provide supporting figures. The Commission itself felt that SKG had not done sufficient in promoting recycling in the industrial sector, particularly in the hospitality industry. Thus, the steps required to improve glass packaging recycling rates will remain ambiguous without a greater understanding of where the main inadequacies lie, and what can be done to resolve them.

---

[30] The municipalities can choose to hire private waste management contractors, so that the immediate physical and organisational responsibilities for collection and transport to the transfer point are assigned to these firms. Nonetheless, each municipality retains ultimate responsibility because it must exercise sound judgment in the choice of contractor used.

[31] A typical transfer point in the Netherlands is a bottle bank located near residential areas. Thus, the collection method used is a 'bring' system.

4.2.3 Paper and Cardboard

In the paper and cardboard sub-covenant, the signatories were Stichting Papier Recycling Nederland (PRN) which represents producers of paper and cardboard, producers of paper and cardboard products, traders in paper and cardboard products, and companies that conduct collection and recycling activities; VNG; and Hedra. Hedra is the branch organisation representing traders and producers of drink cartons. Due to the their unique plastic and aluminium surface coatings, drink cartons are inappropriate for recycling with other paper and cardboard products. This sub-covenant is distinct in that it included all paper and cardboard products, not just packaging. It was simply more practical to have one overall policy instrument concerning the recycling of all products made from this material.

In essence, this sub-covenant was similar in its allocation of responsibilities to the glass packaging sub-covenant. Local councils were responsible for collection from households and transportation to the handover point. In this agreement, the handover point was the weighbridge for the nearest paper and cardboard reprocessing operator that was a member of PRN. At this point the paper and cardboard waste would enter the private sector cycle for reprocessing, governed by market forces. VNG (assisted by VROM) was responsible for encouraging local councils to make arrangements with PRN member companies; for encouraging local councils to reach their collection target of 75 %; and for promoting the separation of paper and cardboard materials from mixed waste within households. PRN, for its part, was required to accept all suitable waste material provided it was sufficiently free from contamination, and to cover the losses for municipalities arising from chain deficits and transport deficits.

As mentioned, drink cartons were to be excluded from other types of paper and cardboard waste. Hedra was therefore required to promote their exclusion from this waste stream: they belonged in mixed waste. Hedra was also required to promote initiatives for the separation of these containers from mixed waste by collectors and processors of waste, with a target of 10 kilotonnes diverted for 2005.

In recent years, the recycling of paper and cardboard (both packaging and non-packaging) has remained slightly below the target of 75 %. The Packaging Commission has been concerned with the unsatisfactory monitoring of this material. In particular, it was noted that separate monitoring for industrial- and household-sourced paper and cardboard has not been undertaken. Monitoring has also been compromised because only 36 % of all municipalities have signed an agreement with PRN, so the data obtained by the Covenant is not as representative as it could be. The remaining municipalities have made arrangements with non-PRN paper and cardboard recycling companies.

4.2.4 Plastic

The private sector organisations that entered into this sub-covenant were the Association of Plastic Recyclers (VKR), which included collectors and recyclers of plastic waste; and the Association for the Environmental Management of Plastic Packing (VMK), which represented the main actors in the plastic packaging supply chain. Local councils do not collect plastic waste from households separately from mixed waste, so VNG was not a signatory to the sub-covenant.

The situation for the treatment of all packaging waste from the KWDI sector has been covered and sufficiently describes the case for plastic packaging disposed of in this sector. A minor difference is that the great diversity of different types of plastic packaging and the difficulties in purifying them precluded the establishment of exact quality criteria, as were

written in the Annexes in the other material sub-covenants. Disposers of packaging waste and VKR member collectors were therefore encouraged to enter into bilateral agreements wherein they could develop their own quality criteria, which would be bound into their contracts. This was covered in the Annex to the sub-covenant, along with other points of consideration when entering into disposal contracts.

For packaging waste collected from households, the main responsibilities fell to VMK and VROM. Under the sub-covenant, the Ministry had to create the conditions for the uptake of sorting infrastructure to sort plastic packaging waste from the residue at mixed waste treatment centres. VMK was also required to encourage such segregation initiatives by the waste management industry.

There was no expectation that VKR member companies should accept all plastic packaging waste offered to it by the KWDI sector or recovered from mixed waste. However, producers and exporters were expected to use as much recycled material as possible in their packaging products, thereby contributing to its demand (provided, of course, that such measures were not unduly harmful to the environment).

The plastic packaging sub-covenant in the third Covenant had the expectation that 27 to 30 % of all plastic packaging entering the market be recycled, with an additional 10 to 15 % recovered. This low target, compared with metal, paper and cardboard, and glass reflects the inherent difficult of recycling plastics (see Box 7).

Table 4-1: Recycling performance by packaging material (2004). Source: Packaging Commission (2004).

Material sub-covenant	**Organisations**		**Recycling**	
	Public sector	**Private sector**	**Target**	**Rate obtained**
Metal	VROM SKB,	MRF	80	86
Glass	VROM, VNG	SKG	90	76
Paper/Board	VROM, VNG	PRN, Hedra	75	70
Plastic	VROM	VMK, VKR	30	19
Wood	VROM	SKH	25	33
Total	VROM, VNG	SVM·Pact	70	62

Box 7. Problems with plastics

The recycling of plastic packaging faces considerable challenges, in comparison to the other major types of packaging material. In order to manage some of the difficulties, a guideline was published by the Association of Cities and Regions for Recycling (Hannequart, 2004). Some of the main problems identified in this area are outlined below:

Diversity in composition:- different plastics are made of different polymers, which cannot be processed as a mixture. In addition, each polymer plastic can be used to make plastics that exhibit a wide range of physical characteristics: films; foams; hard plastics; opaque plastic; transparent plastic; etc. As a consequence it can be confusing to sort plastics accurately, even though recycling labels may be present on the packaging.

Low weight-to-volume ratio:- some plastics, such as films and foams, have a very low density. One problem with this is that it makes collection and separate storage, per unit mass, more expensive than other types of packaging. Moreover, lightweight plastic packaging can carry a high degree of contamination when in contact with other materials. For these reasons, films may often be uneconomical and environmentally unsound to recycle.

Prohibitions against closed loop recycling:- food and hygiene regulations preclude the use of recycled plastics as food and beverage containers unless stringent quality standards are met. This narrows the range of economically viable uses of recycled plastic. Similarly, industrially generated plastic packaging may not be recycled at all if its contents are considered hazardous (e.g. plastic drums containing agrochemicals and other industrial agents).

These problems conspire to make the economic feasibility and environmental soundness of recycling some types of plastic packaging less certain, based on current levels of technology and consumer behaviour. Private sector recyclers of plastics, therefore, are more sensitive to cost factors than other recyclers. Typically, they must be selective on the basis of the type of plastic they recycle (PET and HDPE are favourable); the source of the material (industrial sources are cheaper by virtue of low contamination levels and lower geographic dispersal); and the physical characteristics of the plastic waste they collect (higher density and lower contamination levels are clearly preferred).

While the recovery targets have been met without difficulty (for example, 19 % was recovered in 2004), the typical recycling rate has stayed around 18 to 20 % in recent years, with no sign of improving. The Packaging Commission (2005) has deemed this unsatisfactory. The Commission also notes that only a minor proportion of the total amount of plastic packaging going to market is monitored, making it difficult to scale up to obtain national figures. The quoted performance level of 19 % is therefore a 'minimum estimate'. In addition, the number of participating companies changes significantly from year to year, which makes it difficult to observe trends in performance with confidence. Nonetheless, the plastic packaging sub-covenant remains as one of the less successful agreements within the overall Covenant. As will be discussed in Section 5.2.2, this lower performance can be attributed to a number of important factors.

4.3 Management of Litter

The sub-covenant on litter was aimed at reducing the amount of litter, with an emphasis on small cans and bottles, found in public places within the Netherlands. It involved VROM and VNG on behalf of the national and local governments; and SVM·Pact and the organisation Stichting Nederland Schoon (SNS), Keep the Netherlands Tidy, which was the organisation founded to carry out the packaging industry's responsibilities under the sub-covenant. As stated in the previous chapter, the industry had to meet the strict target of reducing the amount of cans and bottles found in litter by 80 % by the end of 2005 (relative to the estimated 2002 levels). This was the sole responsibility of the industry. An additional target was also set, to reduce the remainder of the litter (i.e. excluding small cans and bottles) to 45 %, which was a shared goal of industry, VNG and the government.

Industry was expected to achieve its goals by engaging in activities to reduce litter, such as education and information initiatives; the development of infrastructure; and by supporting the various legal and enforcement measures adopted by the local and national governments. Industry was advised to work closely with municipalities, through the delivery of 'packages of measures' and the necessary funding to apply them. VNG, for its part, was required to encourage the municipalities to actively participate in the anti-litter programmes and initiatives developed. VROM was also involved through carrying out its own information programmes for the public and local governments. The national government, where necessary, could apply legal instruments to encourage responsible disposal of waste by the public.

An initial study was conducted during the negotiation for the third Covenant into the public attitudes and behaviours relating to litter, the approximate volume and composition of litter, and the anticipated outcomes of various management strategies that were considered for adoption (Bergsma *et al.*, 2001). As well as acknowledging that litter was a major source of annoyance for the Dutch public, it established that the public also viewed small cans and bottles as a highly visible component of litter.[32] The report also described the two monitoring methods for measuring the performance of the sub-covenant. The first monitoring tool was a consumer survey to estimate, among other things, the proportion of purchased small cans and bottles that became litter each year.[33] The second monitoring tool was a volume and composition study, to be performed in selected public areas annually, to determine the different types of waste (excluding cans and bottles) found in litter and their relative proportions, and to obtain data on the level of reduction in litter that had been achieved each year. Using these monitoring tools, it was expected that the performance of the sub-covenant could be quantified.

As it happened, the consumer survey monitoring method was subsequently judged as being too unreliable to confidently measure changes in the proportion of small cans and bottles that became litter (Packaging Commission, 2005). In particular, consumers' stated estimates on their littering behaviour were viewed as being a poor indicator for their actual behaviour. Moreover, the industry was unable to come up with an alternative method of monitoring that would be more reliable. As a result, the performance of this part of the sub-covenant could

---

[32] In terms of the number of units of litter, small cans and bottles accounted for about 10 % of the total amount of litter items found in the Netherlands, according to the report. However, when types of litter were weighted in relation to how much annoyance they caused, the total impact from cans and bottles was estimated at 40 % (p. 5). This was a major justification for the plan to directly address this type of litter. The authors of the report cautioned that the findings were part of a preliminary investigation only, and carry a degree of uncertainty.

[33] In the initial survey of August 2001 summarised in the report, about 3.8 % of the purchased small cans and bottles became litter, which is equivalent to about 50 million cans and bottles. This amount became the reference value for the sub-covenant, which had to be reduced by 80 % by the end of 2005.

not be satisfactorily quantified. Regarding the volume and composition study, the results during the third Covenant period did show a trend towards lower litter volumes, as stated in Packaging Commission (2005).[34] However, the rate of reduction in litter indicated that the target of 45 % for 2005 was unlikely to be met. In addition, this monitoring regime did not give any information relating to the reasons for the diminished quantity of litter. For example, the improvements may have arisen due to the initiatives taken under the sub-covenant, but it was also possible that more frequent and more thorough cleaning programmes for public spaces may also have contributed. VROM has since considered that the sub-covenant was unsuccessful in obtaining the desired outcomes.

In the Decree of 2005, there are no specific targets directed at litter reduction. Instead, targets have been set for the recycling of PET beverage containers according to their volumes (see Table 4-2). The beverages industry hopes to meet these new targets through an extension of the integrated approach adopted in the litter sub-covenant, focusing on information campaigns and the installation of more public litterbins. If the targets are achieved, this should serve the purpose of reducing the beverage container component of litter, in addition to improving the recycling rate of plastics. However, it should be noted that the targets in the Decree are not an anti-litter strategy *per se*; they are merely targets that, in being satisfied, should also allow industry to meet the goal of litter reduction.

The packaging industry is not content with this arrangement (van Beek, 2006). The recycling targets for PET beverage containers are higher than the overall target for plastic packaging, and industry has always found it difficult to meet its expectations for this material. From the viewpoint of SVM·Pact (or Nedvang, the successor organisation), the preferred approach is to retain a single recycling target for plastics while continuing with anti-litter campaigns already undertaken by SNS. In this way, they argue, a single recycling target meets the objective of decreased resource usage yet frees the packaging industry to focus on those waste streams and waste sources that are easiest to deal with. At the same time, SNS can continue its work in promoting responsible disposal in public spaces.

The difficulty with this strategy is that the outcomes of the anti-litter measures are still unable to be quantified, which was a significant problem with the litter sub-covenant. Nedvang may respond by saying that only a trivial 10 % of litter is made up of small cans and bottles, and therefore beverage containers are not a major issue. However, this does not allow for the key problem of litter, i.e. that it is a problem based on the public's perceptions of litter. As far as public views are concerned, cans and bottles account for 40 % of the nuisance value of litter, which is considerably greater than the 10 % cited by industry. In other words, if small cans and bottles were removed from litter, up to 40 % of the public amenity lost due to litter could be regained. If anti-litter responsibilities were placed on the packaging chain for other types of packaging that contribute to litter – not just small cans and bottles – the restored amenity could be considerably higher. The view of Nedvang, that there should be a single plastic packaging recycling target and that SNS continue under its sub-covenant arrangement, only makes sense if the anti-litter measures can be rigorously monitored. But even then, this strategy may not address the litter arising from packaging other than beverage containers.[35]

---

[34] In contrast, a report by TNS NIPO (2005) found that the amount of litter had been significantly increasing.

[35] Litter is not the only driving force behind the Ministry's desire for individual recycling targets for PET beverage containers. The second incentive arises from the falling proportion of refillable large soft drink and beer containers (that were previously prescribed in the Covenants). Because the European Commission has ruled that Member States cannot mandate their use anymore, a higher proportion of beverage containers will now become 'one time use' containers. As VROM holds the view – supported by LCAs – that 'one time use' containers carry a higher environmental burden than

VROM is uncertain that the integrated anti-litter strategy forwarded by Nedvang will deliver satisfactory performances. The preferred approach for VROM, supported by the environmental movement, is the imposition of a deposit-refund system. This approach has been pursued by VROM since before the First Packaging Covenant (Clement, 2006). However, as a deposit-refund system is viewed as likely to incur considerable costs to the private sector, government has not yet entered the relevant Articles of the Decree into force. Industry is thereby permitted to demonstrate whether it can meet its responsibilities under a more flexible arrangement (VROM, 2005).

At this point, political uncertainty makes it impossible to gauge whether a deposit-refund system will ever be applied for PET beverage containers in the Netherlands, regardless of the performance of industry to recycle them.

Table 4-2: New recycling targets for plastic packaging types as directed by the Packaging Decree (Article 4).

Packaging type	Recycling target (%)
Plastic drinks packaging (larger than 5 decilitres)	95
Plastic drinks packaging (smaller than 5 decilitres)	55
Other plastic packaging	45 (put to good use) 27 (reuse as material)

4.4 Producers and Importers sub-covenant

The sub-covenant on producers and importers dealt directly with two specific concerns in packaging waste: restricting the amount of packaging entering the Dutch market, and maintaining a high proportion of refillable beverage containers on the Dutch market. This second concern related to soft drink and water containers (greater than 0.5 litres in volume) and packaging for beer. The sub-covenant targets producers and importers as they have the greatest expertise in, and greatest ability to influence, the way packaging may be reused or prevented.

4.4.1 Protocol on packaging prevention

This protocol dealt with ways in which the impacts of packaging may be prevented, based on the decisions of the producer or importer. It was not merely concerned with quantitative reductions in packaging volume. Whereas the material recycling sub-covenants and the litter sub-covenant approached packaging waste in terms of disposal methods, this protocol was aimed at changing the intrinsic properties of the packaging used in order to diminish the impacts from disposal.

The basic requirement of this protocol was that producers and importers should assess their product packaging combinations in terms of their possibilities for prevention, reuse, and recycling. Where there were opportunities for improvements that would be reasonable to undertake, the producer or importer was expected to do so. The producer or importer was also free to engage other actors in the packaging supply chain (or 'cluster') if this was

refillable containers, it believes that high recycling rates for disposable plastic beverage containers are necessary to offset this.

necessary, but retained the responsibility for the prevention obligations applied in the protocol. Producers and importers were obliged to report their findings made and measures taken in this area every year.

SVM·Pact had a central role in this sub-covenant in co-ordinating the different activities taken, and by targeting sectors of industry that had the potential to undertake improvements. A guideline on packaging prevention was released in 2002, and the organisation periodically printed booklets containing examples of packaging innovations designed to diminish the environmental burden of packaging.

The performance of the Covenant regarding packaging prevention is discussed in Sections 5.1.1 and 6.1.

4.4.2 Protocol on product reuse

This protocol addressed the packaging for beer, soft drink and water. Its intent was to maintain a high proportion of reusable containers for these product groups, as it was viewed by VROM that reusable containers were clearly better for the environment than single use ('one time use'). There was therefore an interest in ensuring that reusable containers were used wherever possible. While VROM also believed that refillable containers were also environmentally advantageous for other types of beverages, it conceded that their use may be economically unfeasible (Clement, 2006).

For beer, no product marketed by a signatory company using refillable bottles could be changed to 'one time use' packaging. Furthermore, for new beer products entering the market, refillable packaging was mandated unless it could be proven that the alternative packaging was no more harmful to the environment than refillable packaging. A small allowance was granted where, if the total volume of beer marketed by a company in non-refillable packaging was less than 2 % of the company's total sales volume, then an environmental analysis was not necessary. Beer that was marketed in refillable containers should be subject to a deposit-refund system.

A similar system was in place for soft drink and water marketed in the Netherlands. However, it only applied to water and soft drink that was marketed in volumes larger than 0.5 litres. Smaller soft drink and water containers were not covered by the protocol on product reuse.

Although the benefits to the environment in using refillable beverage containers were clear, the Dutch approach was viewed as a potential trade barrier within the EU. For these reasons, a similar mechanism was not in place in the Decree – high recycling targets for plastic beverage containers were instead on the producers and importers instead (Article 4 of the Decree).

4.5 Monitoring Duties

One of the major aspects of the third Covenant concerned the monitoring of its performance. Specific performance targets were established for:

1. the total amount of new packaging entering the Dutch market each year;

2. the amount of packaging waste for each major packaging material that was recycled (and recovered, for plastic) each year;

3. the total amount of packaging waste that was recycled or recovered each year; and

4. the total amount of packaging waste that was sent to landfill or was incinerated without recovery each year.

In order to ascertain whether the Covenant was succeeding in reaching these targets, there was a need for accurate monitoring of the major activities of the actors in the packaging supply chain and the materials recycling sector. Although these industrial sectors include a very large number of firms, monitoring was assisted by the use of clusters and material sub-organisations. Clusters were groups of companies that had decided to report their data in an aggregate manner for greater efficiency, and were typically organised along lines of production. Clusters therefore had the role of collecting the necessary data from their affiliated companies, and where necessary, undertook data validation. Material sub-organisations were the packaging and recycling industry organisations arranged according to material type (see the earlier sections in this chapter for more detail). Ultimately all data was sent to the Monitoring Institute, established by SVM·Pact, to manage the information and derive the performance figures necessary for evaluating the Covenant. The relationships between the gathered data and the performance figures that they yielded are discussed in the following paragraphs.

4.5.1 Total amount of new packaging

For the Covenant, the amount of new packaging introduced to the Dutch market should not increase by more than two-thirds of the increase in GDP since 1 January 1999. Thus national volumes for packaging are required, to work out this total volume. In addition, the total volume is also required to calculate the overall recycling and recovery rates, and the rates for each packaging material type.

The total amount of packaging was determined by each producer or importer reporting on the total amount of packaging material that they placed onto the market for the year.[36] Along with this information, they also reported their annual turnover and their SBI code relating to packaging sold in the Netherlands.[37] From this information, the Monitoring Institute could calculate how much packaging came to the Netherlands market (for each packaging material), from members of the Covenant. However, this information did not include data for non-signatories or those producers / importers that were exempt from reporting.[38] The total amount of packaging was therefore obtained by comparing the annual turnover for the signatories to the overall turnover for that industrial sector, which could be obtained from taxation data sorted by SBI code. Total packaging was then appropriately up-scaled. This extrapolation required that the turnover per unit output of packaging was essentially independent of whether a producer / importer was a signatory or not.

The turnover figures were also used as the basis for determining how much each member company was required to pay SVM·Pact for the overall management of the Covenant. As will be discussed in Section 4.5.3, this may impact the quality of the data used to assess the Covenant.

---

[36] For 'last minute' packaging, the supplier of the packaging was the responsible actor.

[37] The SBI code is a code used by Statistics Netherlands, allowing the statistical bureau to aggregate data on specific types of economic activities. Note that the annual turnover and SBI code are only for those activities undertaken by firm associated with producing or importing packaging in the Netherlands.

[38] Exemptions from reporting were granted to smaller businesses that produced or imported small amounts of packaging, or had a small number of employees. Such businesses were still expected to perform their packaging prevention duties.

4.5.2 Amount recycled and recovered for each packaging material

Each of the different packaging materials had its associated recycling measured in different ways, according to Chapter 3 of Annex 1: Monitoring Protocol of the Covenant. The particular technical details won't be elaborated on in this section. The independent assessor, the EURANDOM agency, had judged the monitoring methods used as independent, unambiguous and transparent.

Broadly speaking, information was gathered according to the protocol by the material recycling branch organisations for wood, plastic, metal, paper and cardboard, and glass. Each of these organisations then sent their aggregated data to the Monitoring Institute, so that the recycling and recovery rates for each packaging material could be determined.

4.5.3 Total figures for recycling rates and for disposal without recovery

At this stage the Monitoring Institute would integrate the packaging recycling data with the data for packaging put onto the Dutch market. The recycling rate was simply the proportion of packaging recycled, out of the total amount of packaging marketed (expressed as a percentage). This was done for each material and for the total packaging brought to the Netherlands market. The amount that was disposed of without recovery was calculated from the remaining amount of packaging that was not recycled or recovered.

From these steps, the Monitoring Institute was able to provide information on the performance of the Covenant including the recycling and recovery rates for each material and for packaging in its entirety; the total volume of packaging brought to the Dutch market; and the total amount of packaging that was sent to landfill or incinerated without recovery each year. However, in the interests of retaining confidence in the results obtained, procedures had been laid out in the Covenant for both the internal checking and random auditing (by independent, external auditors) of the data (Sections 4.4 and 4.5 of the Monitoring Protocol, respectively).

Despite these procedures, there has been concern from the environmental movement (van Duin, 2006) that private companies are motivated to under-report their turnovers and volumes relating to their packaging. Under-reporting would allow a private actor to reduce their SVM·Pact membership charges. Moreover, if the reported volumes of packaging entering the market were less than the actual volumes, the recycling performances would be erroneously exaggerated. SVM·Pact would benefit from having lower apparent packaging volumes (which contributes to its prevention requirements); and from higher apparent recycling rates. Thus, there are considerable incentives for both individual member companies and SVM·Pact itself to have reported volumes understated. If they were to follow these incentives, the Covenant would have the appearance of functioning better than in reality. This would lead to lower environmental quality, and disproportionately high costs to those companies that had been acting honestly.

4.6 Compliance and enforcement

As stated in the previous section, auditing and data checking were performed to improve data quality in the Covenant. However, these measures are only of use when companies are willing to report their turnovers and packaging volumes in the first place. In some cases, SVM·Pact found that companies failed to report the necessary data to the Monitoring Institute or to the cluster organisation established to manage its information. SVM·Pact's role was then to

encourage correct reporting from these non-compliant companies. Where companies persistently failed to report, SVM·Pact could expel them from the organisation.

A second form of non-compliance exhibited by companies in the packaging chain was the failure to pay membership duties to SVM·Pact. Again, such companies would eventually be expelled from SVM·Pact if they did not comply.

In order to keep the individual costs to its member companies as low as possible, SVM·Pact has an interest in having as many companies as members as possible. Thus, expulsion can be considered as a measure of last resort. Upon the exclusion of non-compliant companies SVM·Pact would also notify the Dutch environmental authority, VROM Inspectorate, which companies were no longer members of SVM·Pact. In this way, the inspectorate would remain informed of those companies that would become required to fulfil their packaging waste responsibilities individually as dictated by the Packaging Regulations of 1997. Pursuit of these companies by the inspectorate usually led to their re-joining with SVM·Pact, as it was clearly financially preferable to individual actions in most cases (VROM Inspectorate, 2003, p. 47).

Van Beek (2006) approximates that about 450 000 companies should have had some form of responsibility under the third Covenant. The deputy inspector of waste at VROM Inspectorate has estimated that tens of thousands of companies involved in packaging are probably free-riders, simply because there are so many companies that, strictly speaking, engage in some form of packaging (VROM Inspectorate, 2003, p. 47) yet fail to act on their responsibilities. The response of the inspectorate has been to target the larger companies that have the biggest impact on waste volumes, thereby optimising the gains made from the limited resources that can be devoted to inspection.

This arrangement is not as equitable as the ideal scenario where all companies complied and there were no free riders. On the other hand, increased efforts to monitor for compliance and to execute enforcement activities will incur greater costs in these areas. From the viewpoints of SVM·Pact and VROM Inspectorate, compliance levels have generally been satisfactory (van Beek, 2006; VROM Inspectorate, 2003, p. 48).

4.7 Concluding Remarks

In this chapter, the Covenant responsibilities on the packaging and recycling chains have been examined in detail. A large component of these duties centres on reporting their normal business outputs including turnovers, packaging volumes outputted, and amount of recycling performed. These information duties ultimately converged on the Monitoring Institute, the organisation required to aggregate the collected data in order to assess the Covenant and to ensure data quality. Although internal data checking and auditing by external bodies is performed, it is executed in a random fashion and therefore may not serve as a deterrent to dishonest or erroneous reporting. Failure to adequately report or to pay membership fees may result in a company's expulsion, which means that company must fulfil its duties on an individual basis and it may be reviewed by VROM Inspectorate.

Promotion and encouragement responsibilities for the different aspects of the Covenant fell to sub-organisations within the Covenant. The material sub-organisations (see summary of organisations in Table 4-1) were predominantly required to promote recycling in the KWDI and household sectors, assisted by VNG and VROM. The littering sub-covenant required that the organisation Keep the Netherlands Tidy encourage the correct disposal of packaging waste in public spaces. SVM·Pact itself was required to co-ordinate research into packaging

prevention, as well as oversee the overall implementation of the Covenant by the packaging and recycling chains.

Other duties on the private sector during the Covenant related to improving packaging for the environment; and refraining from the use of 'one time use' beverage containers. These duties were applied under the producers and importers sub-covenant. Since the Decree, mandates on reusable packaging have been removed. Improvements in packaging to reduce the impacts of its waste are still expected to occur, although the Decree does not apply any packaging prevention targets.

Although such a diverse range of tasks fell to SVM·Pact and the packaging chain, they were not actually required to physically perform any of the major steps involved in recycling. Collection and transport of household packaging waste to the recycling industry was performed by the municipalities (co-ordinated by VNG). The recycling industry naturally undertook recycling as part of its normal everyday business activities. Thus, the packaging chain largely held facilitative responsibilities, i.e. to encourage and create favourable conditions for recycling; and to promote behaviours that reduce littering and overall packaging volumes. During the Decree, municipal collection responsibilities were transferred to the packaging chain, making this sector directly responsible for a necessary stage in packaging recycling for the first time.

5 Performance of the third Covenant

In this section, the performance of the third Covenant will be scrutinised, in terms of its environmental effectiveness in meeting its objectives and in its economic and social aspects. Recalling from Chapter 2, the following aspects will be looked at:

- the **environmental effectiveness** of the third Covenant, including **policy relevance**;
- **economic efficiency** and **distribution of costs** (the two criteria are dealt with in one structured section devoted to economic aspects); and
- **public acceptance**, as revealed through stakeholder responses to the third Covenant.

Importantly, trends in this performance during the lifetime of the third Covenant, in order to gain an understanding of how things have looked over recent years, are also presented. Unfortunately, the techniques used to measure the outcomes of the Covenants from 1991 to 2005 have undergone occasional revisions, so for this reason quantitative descriptions of the long-term trends will be avoided. Instead, efforts will be made to qualitatively describe the changes that have occurred in the longer term.

The main purpose of the current chapter is to systematically bear evidence on the performance of the third Covenant in the criteria chosen in Chapter 2. Examination of the causes for these performances will be made in the Discussion, which follows on in the next chapter.

5.1 Environmental effectiveness and policy relevance

In this section, the performance of the third Covenant in meeting its environmental goals is laid out. It is necessary to look at both the level of ambition in setting the goals, and the level of success in meeting those goals. On one hand, an environmental policy cannot be said to be very effective if its goals are too modest in proportion to the problems being addressed. On the other hand, a policy is similarly ineffective if its goals are suitably ambitious yet they are far from being realised during policy implementation. Evaluations of the policy objectives and the success in meeting them are essential.

Recalling from Chapter 3, the third Covenant faced the following concerns:

- Placing an absolute limit on the amount of packaging waste disposed of without recovery in the Netherlands. This core objective was supported by two sub-goals:
  - to meet or exceed the targeted overall recycling rate; and
  - to restrict the growth in packaging entering the market relative to the growth in GDP over the same period.
- A secondary objective based on reducing the amount of litter from small cans and bottles in litter, and on reducing litter volumes in general, was also set. However, activities to meet this goal were confounded by the inability to monitor the results with confidence, as stated in Section 4.3. The litter performance will not be discussed due to these monitoring difficulties, although such difficulties in themselves indicate a failure of the Covenant. The

fact that litter is a clear concern for Dutch society and for VROM means that it remains as a decision-making factor in packaging waste policy. This will be examined in the Discussion (in Section 6.3).

- Finally, individual recycling targets were also set for the major packaging waste materials – metals, paper and cardboard, glass, plastics, and wood – insofar as they would allow the packaging industry to meet the overall recycling goals (as shown in Table 3-1).

Those companies that chose to become non-signatories were required to meet the targets of the Regulations, which were equivalent to targets for recycling in the Directive (with an overall recycling target of 65 %).

The objectives indicate that the parties to the Covenant took a multi-faceted approach to packaging waste by including quantitative targets for litter reduction; for restrictions in packaging volumes entering the market; and for reducing the amount of packaging waste that is disposed of without recovery. This contrasted with the Directive, which only placed quantitative targets on recycling. It can be argued then, that the scope of the Covenant was more comprehensive than the Directive in setting specific goals aimed at reducing the impacts of packaging and packaging waste. Whether appropriate levels of ambition for each goal accompanied this wide scope is addressed in the following section.

5.1.1 Policy relevance

The main parameter of success for the third Covenant was the cap on packaging waste volumes sent to landfill or incineration (i.e. without recovery). As mentioned above, this requirement made use of two strategies – recycling targets; and restrictions in the growth of packaging sent to market – that placed persistent pressures on the packaging industry. The third Covenant therefore hinged upon these two strategies and the proximate goals they aimed for. Although the ultimate goal was to have 850 kilotons or less of packaging waste being disposed of without recovery, it was the recycling and marketed packaging targets that were the main driving forces to push the packaging industries activities beyond the 'business as usual' scenario.

The packaging prevention target

The many roles of packaging – as a means of protecting and preserving goods; as a way to facilitate transport, handling and storage; as a medium for marketing; and others – ultimately constrain the ways in which packaging manufacturers can rethink their products. Moreover, there are other factors over which the packaging chain has very little control, such as consumer behaviour and the national demographic profile. It is therefore challenging to judge a given target for this parameter as being appropriately effective, or indeed, obtainable.

The target for the third Covenant was to restrict the percentage growth in packaging sent to market in the Netherlands by two-thirds of the percentage growth in GDP over the same period (using 1999 as a reference year). The 'business as usual' scenario would arguably be to set the growth in packaging marketed as being equivalent to the growth in GDP.[39] So, while it can be argued that the target was *possibly* appropriate in that it *potentially* required action to be taken by the packaging industry, it is much harder to say how much this target would

[39] This does not imply that there is a strictly one-to-one relationship between GDP and marketed packaging; it merely implies that this would be a reasonable target if the Covenant was designed not to apply pressure on the packaging market.

challenge the industry in practice. On the other hand, it should be remembered that neither the packaging Directive nor other Member States place any quantitative targets on packaging prevention. The Dutch initiative is, in principle, a step in the relevant direction.

Alternatively – although the use of a prevention target is commendable in principle – practical benefits will only occur where it is able to evoke a satisfactory change in the level of packaging in the market. From the position of the environmental movement (van Duin, 2006), any target in this parameter that allows absolute volumes of packaging entering the Dutch market to increase is unsatisfactory. This includes the target of the third Covenant, which is not an absolute target for packaging volumes at all. Instead, the target is directed at the change in packaging volumes, and is based on the change in GDP. The packaging prevention target of the third Covenant will always permit growth in packaging volumes, as long as there is economic growth in the Netherlands. In the rare event of zero economic growth, packaging is not permitted to increase in volume. But there is no likely scenario in which the targeted volume of packaging delivered to market will decrease in absolute terms. For the environmental movement, this signifies a failure.

In fact, packaging prevention targets have been progressively weakened since the beginning of the Covenant period. The first Covenant stipulated an absolute reduction in overall packaging volumes. The second Covenant retained this stipulation, but granted concessions to industry based on national economic growth. In the third Covenant, overall packaging volumes were no longer controlled: the change in packaging volumes entering the market each year became the new focus. Finally, in the Decree the notion of placing precise limits on packaging entering the Dutch market has been abandoned altogether. While this denotes a lack of ambition regarding packaging prevention, it is perhaps a case of finally conceding that previous efforts have been unsatisfactory – see Section 5.1.2. Although an absence of a policy target may be better than having a flawed and misleading policy target, it would be far better to revise the packaging prevention target objective so that absolute benefits to the environment can be achieved.

Recycling targets

Regarding the targets for recycling, the Netherlands had pursued ever-increasing performances through the use of Covenants since 1991. When the Packaging Directive was imposed, the Netherlands was compelled to implement its targets into regulation. However the Covenant targets were always higher than these mandated levels, with the third Covenant setting a target of 70 % for overall recycling. In this sense, the intended effects of the Covenants were certainly more ambitious than those expected by the EU. There exists considerable room to set higher recycling targets, but as the packaging industry struggled to meet the targets of the third Covenant, this would be of questionable benefit.

For the sake of comparison, the recycling rates required by the Packaging Ordinance of Germany are given below in Table 5-1, along with those of the Netherlands. The figures for each country are not exact counterparts. Firstly, the German targets had to be obtained immediately after 1 January 1999; the Netherlands targets were set for the year 2005. Secondly, the way in which the packaging materials are divided into categories differs between the two countries (for example, there is no recycling target for 'composites' in the Netherlands). Thirdly, the quotas for the German system are for sales packaging: other types of packaging must be collected then reused or recycled as the obligation of the manufacturer or distributor. This arrangement is likely to be more onerous than that of the Netherlands, because sales packaging (analogous to household-sourced packaging) is generally more challenging to deal with than other types of packaging. Neither of the two countries can be said to be more

stringent than the other if only the recycling targets are taken into account. But because the German approach obliges the packaging industry to meet its quotas using sales packaging only, it is likely to be a more challenging and expensive situation for industry than the Dutch case. This conclusion is all the more certain, considering that the Dutch packaging industry had almost completely avoided the treatment of plastic packaging from households during the third Covenant.

Table 5-1: Comparison of recycling targets between the German and Dutch systems

	Recycling target (%)	
Packaging material	**Germany – Green Dot**	**The Netherlands – third Covenant**
Glass	75	90
Metal	70 % tinplate; 60 % aluminium	80
Paper and cardboard	70	75
Plastic	60 % recovered (36 % recycled)	37 % to 45 % recovered (27 % to 30 % recycled)
Composites	60	Not targeted

In the Decree, there is less of a focus on targets; instead there are signs that VROM is moving towards a more procedure-oriented approach to packaging. For example, the Decree places no quantitative targets on packaging prevention, nor does it set a target for the absolute volume of packaging waste that is disposed of without recovery. There is the provisional demand for a deposit-refund system for beverages, which is a procedure-oriented measure. A greater emphasis towards procedures is indicative that VROM is less confident that the packaging industry is able to satisfactorily perform its duties under a flexible arrangement where it sets its own actions. This is in agreement with the notion that covenants are no longer so appropriate for packaging waste policy, a view clearly manifested by VROM (see Section 5.3).

5.1.2 Environmental effectiveness of the implementation

Reducing the volume of packaging waste disposed of without recovery

The main goal of the most recent Covenant was to restrict the amount of packaging waste being disposed of without recovery (i.e. by landfill or incineration). It was decided to set the target of disposing less than 850 kilotons of packaging waste in this manner in 2005. From Figure 5-1, it is evident that this target is unlikely to have been met. The improvements from the earlier Covenants have slowed, so that the amount of packaging waste going to landfill or incineration is slightly higher than the target level. Moreover, the performance of the Covenant appears to have stagnated, and it cannot be said with certainty that the target would ever be met under current practices.

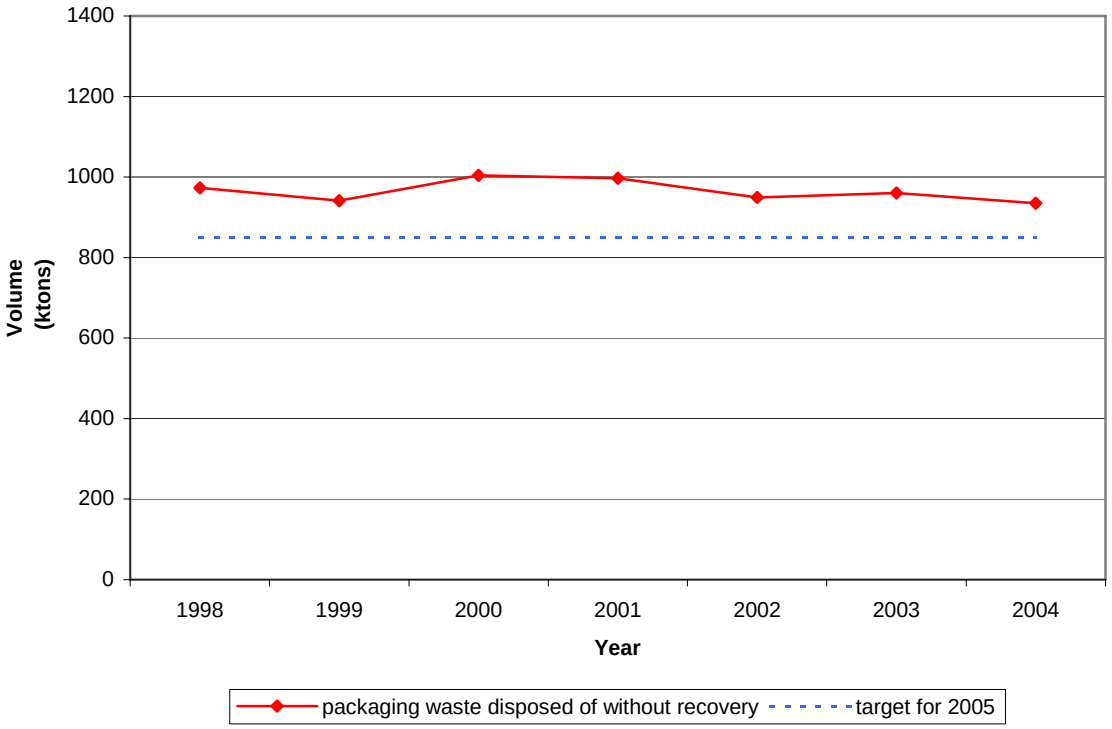

Figure 5-1: Packaging waste disposed of without recovery in the Netherlands (1998-2004). Data sourced from Packaging Commission (2005).

This parameter, introduced for the second Covenant, cannot be directly compared with obligations of the EU as the packaging Directive does not place volume restrictions on packaging waste disposed of without recovery. In addition, the other Member States generally do not have the same approach of using quantitative targets for packaging waste disposed of in this manner either. The second and third Covenants were unusual in this regard.

This ultimate objective of the third Covenant relied upon the use of targets for recycling packaging waste, and for reducing the amount of packaging introduced to the Dutch market. If both targets were met, then it was anticipated that the goal of 850 kilotons or less would have been achieved. Unfortunately, neither the recycling target nor the prevention target were obtained, as will be examined below.

Reducing packaging entering the Dutch market

An explicit aim of the third Covenant was to restrict the growth in packaging entering the Dutch market to two-thirds of the growth in GDP over the same period, using 1999 as the base year. In its most recent report, the Packaging Commission (2005) observed that the Dutch GDP had risen by 10.2 %, which fixed the target growth for packaging at 6.6 %. Over the same period, the observed growth in packaging entering the market was 8.8 %. The intent to decouple packaging from economic growth has only been moderately successful during the lifetime of the third Covenant.

Increasing the recycling of packaging waste

Although earlier Covenants displayed a steadily improving proportion of recycling in the treatment of packaging waste, the most recent Covenant has been unable to grant notable increases in performance. Figure 5-2 below illustrates the present stagnation in the recycling rate in the Netherlands, which has remained between 60 and 65 %. As shown, the Netherlands exhibits higher recycling than is mandated by the packaging Directive (both prior to and after the 2004 Amendment), but this achievement is modest compared to Germany. However, Germany, the Netherlands, and other Member States that have been traditional performers in recycling packaging generally demonstrate a failure to greatly improve in recent years (Ecolas N. V. and Pira International, 2005), as shown in Figure 5-3. In contrast, less successful countries such as Spain are still improving. This may suggest that the earlier achievers have made most of the gains that are possible using their present measures; higher recycling rates may now require major adjustments to their overall strategies.

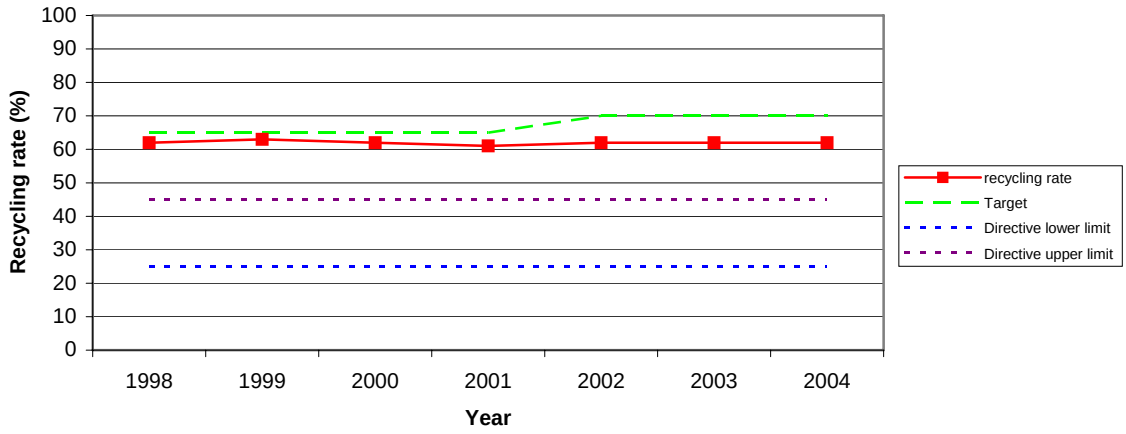

Figure 5-2: Trend in the overall recycling rate for packaging in the Netherlands (1998-2004). Data sourced from Packaging Commission (2005).

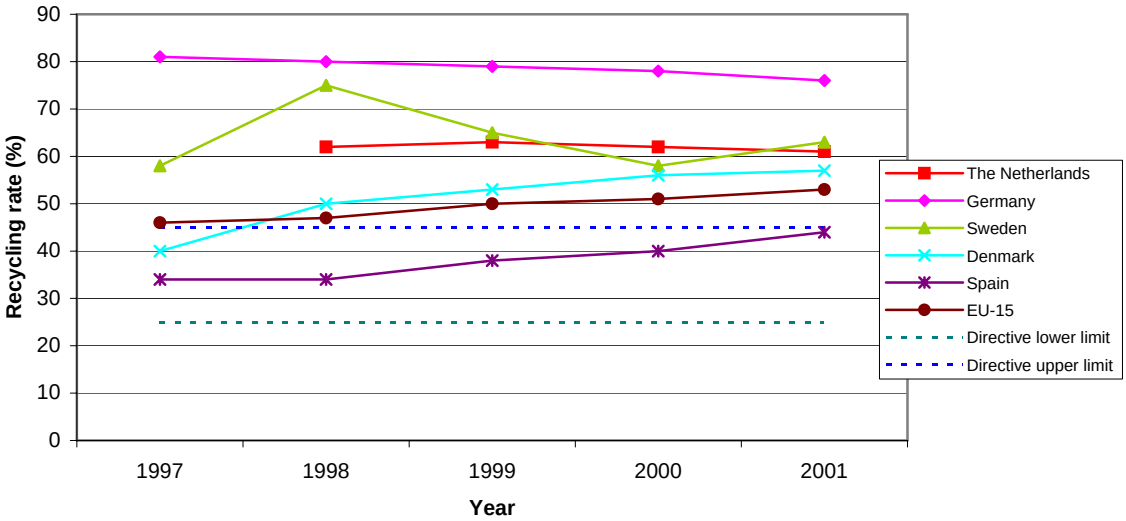

Figure 5-3: Overall recycling performances for packaging in the EU, showing selected countries (1997-2001). Data sourced from Ecolas N. V. and Pira International (2005).

The overall recycling rate of 62 % for 2004 suggests that the target of 70 % demanded by the Covenant was not met in 2005.[40] Insight into the reasons for this may be developed by looking at the recycling rates for the different packaging materials used in the Netherlands.

Table 5-2 summarises the recycling targets and rates achieved for 2004. Figure 5-4 shows the recycling achievements for each material over the last few years – it is clear that the 2004 results are quite typical of the recent performance of the Netherlands. It is apparent that the greatest challenge lies with the recycling of plastics. Broadly speaking, the material recycling rates are neither improving nor getting worse to any appreciable degree.[41] By contrast, the earlier years of the Covenant period, shown in Figure 5-5, demonstrated clear gains for all packaging material types.[42] Over this period, the recycling of metals was dramatically improved, largely due to the increased used of incinerators fitted with metal recovery infrastructure.

Table 5-2: Recycling of packaging waste from all sectors by material, 2004 (Packaging Commission, 2005; data for 1991 taken from OECD, 1998).

Material	**Recycling rate achieved (%)**	**Target rate (%)**	**Market volume in kilotons (1991 values in brackets)**	**Proportion of market (%)**
Metal	86	80	213 (309)	8
Glass	76	90	549 (558)	20
Paper and cardboard	70	75	1460 (1688)	52
Plastic	19	27 + 3	549 (645)	20
Wood (excluded from total)	33	25	440 (n.a.)	0
Total packaging	**62**	**70**	**2771 (3201)**	**100**

The table shows that the most problematic packaging material for recycling is plastic, while the recycling of metal has been the most successful. But in terms of the total volume of packaging on the market, just over half of it (by weight) is made of paper and cardboard. The performance for this packaging material therefore has the greatest effect on the overall recycling rate achieved in the Netherlands; the recycling of metal packaging has the least effect.

[40] According to Packaging Commission (2005), this recycling rate has been aggregated from the individual recycling rates derived for the main packaging materials. But owing to the relatively low monitoring coverage for plastic packaging waste, a 'lower estimate' of the recycling rate has been used. The 'true' overall recycling rate may therefore be marginally higher than that indicated by Figure 5-2, but is still unlikely to reach 70 %. Also, this does not influence the levelling in performance in recent years.

[41] An exception can be made for wood packaging, which had only been integrated into the second Covenant. Its improving performance may be based upon the fact that the easier and cheaper measures are still being explored.

[42] The absolute values for recycling percentages used in Figure 5-4 and Figure 5-5 are not directly comparable due to a change in the monitoring regimes used between 1997 and 1998 (Packaging Committee, 2001).

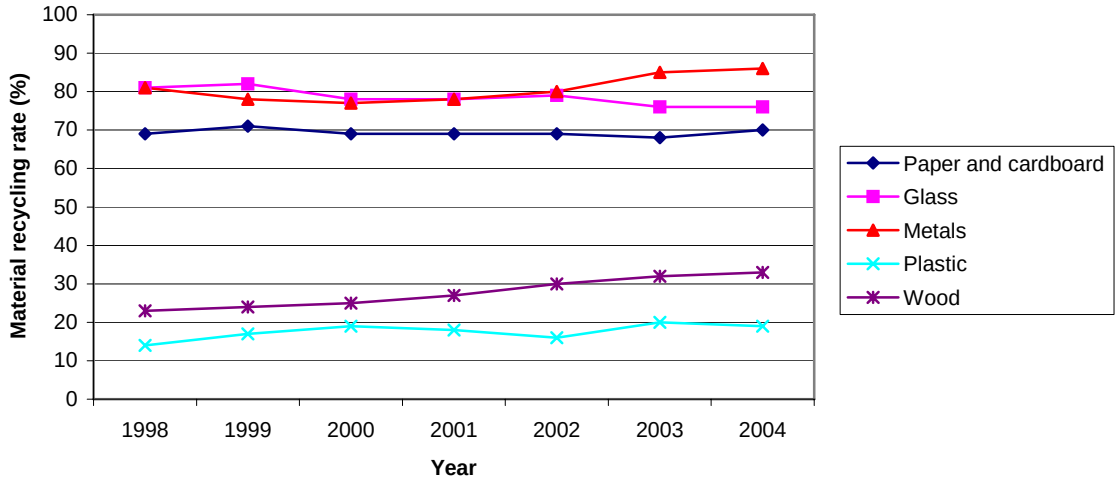

Figure 5-4:Trends for packaging material recycling rates in the Netherlands (1998-2004). Data sourced from Packaging Commission (2005).

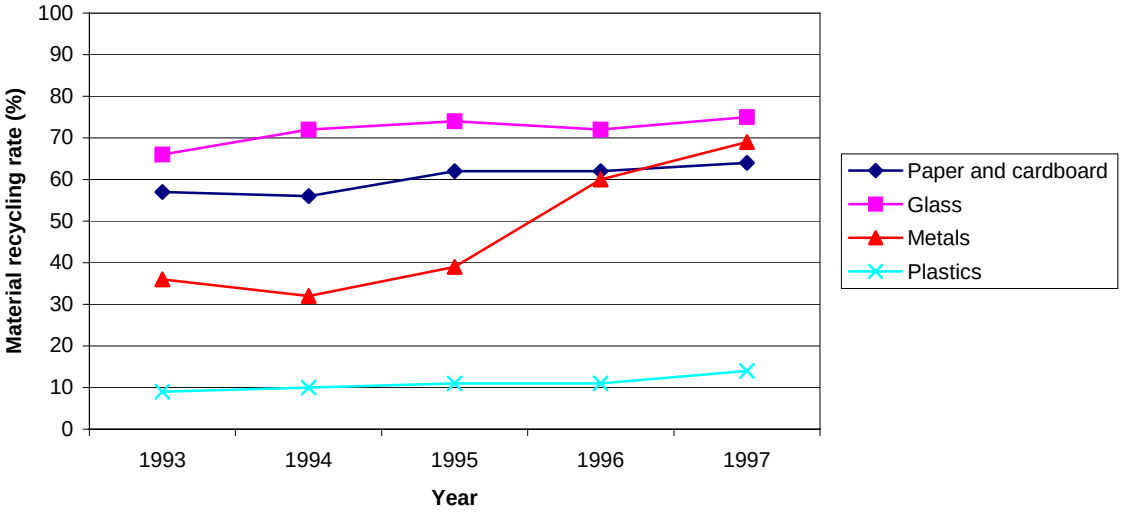

Figure 5-5: Trends for packaging material recycling rates in the Netherlands (1993-1997). Data sourced from Packaging Committee (2001).

Ultimately, the material recycling targets were set in order to meet the overall recycling target of 70 %. The targets were differentiated, based on the different capabilities of the recycling industry in managing each material. Although it has been asserted by SVM Pact that some of these targets are unduly high (van Beek, 2006), an important point is that the industry should always be expected to perform beyond the 'business as usual' scenario so long as environmental improvements are necessary.

5.2 Economic aspects

In this part of the Analysis, the economic efficiency of the third Covenant is considered as this aspect is indicative of the economic resources used to implement the policy tool. Following on, the ways that these costs have been dispersed are detailed, to gain an understanding of the relative burdens placed on different sectors of society and to see which of them ultimately pay for the implementation of the Covenant.

5.2.1 Economic efficiency

Attempts to adequately characterise the economic efficiency of a policy instrument, like the Covenant, meet significant challenges. A central problem concerns the choice of parameter that best serves to indicate economic efficiency.[43] In addition, difficulties arise in determining which set of activities involved in implementing policy should be included in the costs, and where the boundary of 'the system' should be drawn. And within this system, analysts must choose the most suitable manner of measuring the outcomes accurately and qualitatively, so that ambiguity and incompleteness in the results are avoided. Then there is also the problem of allocating costs to activities that, while requiring resources or involving utility (or disutility), are not customarily viewed through the lens of economic value. These difficulties are compounded when comparisons between policy scenarios are sought. Firstly, there is the difficulty of achieving consistency in the approaches taken, even when the scenarios may not be completely analogous. Secondly, it may be problematic to apply simple, direct conversions of costs and outcomes from one scenario to another due to contextual differences. There is also the limitation that the outcomes of a policy implementation, and the costs involved, can be highly dynamic: the findings on economic efficiency may therefore have a short shelf life.

With these concerns in mind, the discussion of the economic efficiency in this section will be limited to the findings made in prior studies. Our interest is not in obtaining precise numerical figures on the costs involved with the Covenant, but to gain an understanding of how its costs compare to other policy measures that could have been used in the Netherlands, or may be used by other countries.

A comparison of 'packaging recovery systems' in the EU

Some years ago, a study was undertaken to determine the relative costs and outcomes of packaging recovery systems[44] in France, Germany, the Netherlands and the UK (Sofres, 2000). As noted by others (Ecolas and Pira International, 2005), the data used is considerably outdated now. However, their broader findings may still hold relevance, especially those findings that are dependent on systemic or procedural elements that have not been significantly reformed since its publication.

The cost aspect centred on in the Sofres report is termed the 'financing need' of the packaging recovery system:

> *'the financing need equals the funds that need to be injected into the market in order to render recovery economical or, in other words, to make recovery happen…'*

---

[43] See, for example, the discussion on determining the cost effectiveness of municipal solid waste collection in the EU in Hogg (2002), pp. 28-30.

[44] The 'packaging recovery system' is the term used by Sofres (2000) to describe the activities and policy implementations for managing (i.e. recovering) packaging waste.

Essentially, the report is principally concerned by the costs that are required to make recovery viable. Note that this must include the costs of separation, collection and transport of household packaging waste to the first actors in the recycling chain. Without these steps (managed by municipalities or, where full EPR is enacted, by the product supply chain), the packaging waste is unsegregated from general waste and is dispersed, and is clearly not market-ready.[45] However, other costs to promote and improve recovery rates, taken by public authorities and the product supply chain, also contribute to this financing need.

Broad observations are drawn in the executive summary of the report, based on the critical features of the packaging recovery systems examined. The comments on the Covenant in the Netherlands are as follows:

> *'The Dutch system is to a large extent based on agreements with industry and public authorities and does not differentiate between industrial and household packaging. As a consequence, there is a focus on the most cost-efficient sources for the respective packaging materials… It fails, however, to achieve as high recycling rates as the German system.'*

This German system, the 'Green Dot' system managed by DSD, is described in the report as being based on *'the setting of a relatively detailed framework differentiating between household/sales and non-household/non-sales packaging… these systems do not necessarily focus on the sources that are most cost-efficient to recycle.'*

The report suggests that the flexibility, or freedom of choice available, under the Covenant system has conferred lower costs to the Netherlands. But environmental effectiveness may have been sacrificed in exchange. This interplay between environmental effectiveness and economic efficiency will be explored further in Section 5.2.1. A consequence of the flexibility of the Covenant, for both environmental effectiveness and economic efficiency, is the almost exclusive sourcing of plastic packaging waste for recycling from the KWDI sector.

Further insights can be taken from the Sofres report. In particular, national population density works as a notable factor in increasing the economic efficiency of a packaging recovery system, as small and remote municipalities increase costs considerably. This may have led the Netherlands to appear more favourable than the other countries (due to its high population density and small area), regardless of the policy instrument used.

Interestingly, the study was unable to note any clear trends with respect to increasing quantities of packaging waste recovered and the costs per tonne recovered.[46] It was surmised that greater efficiency might be granted by growing expertise and economies of scale as volumes increased. However, this benefit may be counteracted by the increasing costs associated with taking waste from sources that are progressively more expensive to treat. Some trends may become visible within a more focused study.

The qualitative analysis summarised in the Sofres report concludes that the Dutch system for packaging recovery is economically efficient, based on the (now possibly outdated) data used. But perhaps more significantly, the report isolated specific features of the system that may have contributed to the less demanding financing need. Most notably, the Dutch approach benefited from allowing municipalities and the packaging industry to select the most economic

---

[45] In the report, Sofres has chosen not to evaluate the costs for source separation enacted by households. There is too much uncertainty in this estimate for it to be included with confidence.

[46] This lack of clear correlation is echoed by RDC-Environment and Pira International (2003, p. VI): *'there is no proportionality between recycling costs and the levels of the targets'.*

efficient sources of packaging waste to address, to the exclusion of more expensive packaging waste sources and types.

An analysis of municipal waste collection costs

A study edited by Hogg (2002), for the European Commission, sought to uncover the cost factors in municipal waste collection systems. Although this is not the precise area of concern in the present thesis, there is sufficient overlap to explore some of its findings here. The study is not a country-to-country comparison (unlike the Sofres report) but it does isolate some cost factors that, by extension, can be used to assess the Covenant.

The relevant part of this report analyses the costs of collecting and separating 'dry recyclables' from household waste. In particular, the authors note (on p. 34, referring to costs per tonne collected): *'the collection costs for fractions such as glass, paper and textiles are typically in the same area as those for residual waste. Light packaging materials – plastics and cans – are typically much more costly to collect.'* This is significant from the viewpoint that glass and paper and cardboard are the only packaging materials separately collected from households in the Netherlands. Costs are kept lower by targeting only those materials for separate collection. It is also observed (p. 34) that bring systems are generally cheaper, and require less outlays, than kerbside collection systems. However, it was anticipated in the report that bring systems have a lower rate of consumer compliance due to greater inconvenience, and may have a higher risk of contamination. Thus, the use of bottle banks in the Netherlands may have kept the costs lower for municipalities, at the risk of compromised collection rates.

The authors also discuss in detail the relative costs of different post-collection sorting schemes for dry recyclables. In general, it was found that diverted packaging waste that is less homogeneous and has less overall density is more expensive to sort than more homogeneous, denser waste. For the Netherlands, post-collection sorting of household packaging waste is predominantly[47] limited to the sorting of paper and cardboard into different grades (a heavy and more uniform waste stream) and the capture of metals (via magnetic and electrical measures) in a pre- or post- incineration recovery stage.

The findings of the report can be applied to the Netherlands to suggest that the collection and sorting costs for household packaging waste in that country are relatively modest. Again, it should be kept in mind that this may carry the flipside of impaired recycling performance.

Further comments on economic efficiency

This paper makes no attempt at conducting its own *original empirical research* into the absolute costs of implementing the third Covenant in the Netherlands. Rather, the preference was to make use of prior studies in this area. It is also worth examining some of the other intrinsic features of the Dutch approach that have not yet been discussed with respect to economic efficiency. No suggestion is made that the features examined below will influence economic efficiency in the Netherlands with certainty; they are simply listed as being conjecturally influencing to economic efficiency.

The Covenant system makes use of a competitive, well-established free market for the treatment of packaging waste. The packaging chain organisation SVM·Pact, while having

[47] Separation of e.g. plastics and beverage cartons from mixed household waste is performed on a small scale in the Netherlands. However it is generally not common practice.

responsibility for prevention and for the recycling performance of the Covenant, does not directly engage in or control recycling activities. Its role in this respect is primarily to facilitate packaging prevention and recycling, and to ensure that its members in the packaging production and recycling chains fulfil their monitoring, reporting and other duties. Those members – as free private agents – are therefore subject to the usual market forces in a competitive setting. The costs for recycling may therefore be significantly cheaper than in packaging waste management systems that are controlled by a single entity.

The reporting system of the third Covenant makes use of 'clusters' of firms in the packaging chain. This dispersed approach to reporting and compliance may have cost advantages in that localised organisations manage the reporting of companies that already have some level of business interaction. Thus, although there are several hundred thousand companies involved with packaging in the Netherlands, SVM·Pact does not directly administrate each company individually. The administrative burden of managing the packaging chain may therefore be reduced compared to a more centralised approach. Moreover, information checking within each cluster is done by personnel that have a direct understanding of the particular supply chain and the particular firms involved. In a sense, industrial 'local knowledge' is exploited to advantage.

The use of a branch organisation that represents private business may also render the packaging waste management system more economically efficient. Not only is there an incentive to invest pragmatically in information and education programmes to improve recycling and prevention, there is also the benefit of industry-authority partnerships against free riders. The more free riders there are in the system, the higher costs will be for those companies that are financing SVM·Pact. Thus the represented companies and the branch organisation itself both have self-interest in reporting free riders to VROM Inspectorate, as opposed to engaging in a more costly, adversarial relationship (VROM Inspectorate, 2003, p. 47).

To conclude, there are significant factors that would indicate that economic efficiency has been given due concern in the third Covenant on packaging. These concerns have translated into a system that makes use of free markets and private sector interests to keep costs low in many aspects. However, one major activity that may not have been subject to the same cost pressures under the Covenant was the collection and transport of packaging waste from households. (Although the overall strategy of recycling manifested cost sensitivity, the collection system was ultimately funded by local taxpayers who may be less cost conscious than the packaging chain.) This has changed in the packaging Decree. This focus on the private sector for administration and strategy, on the other hand, may have resulted in the goals of the Covenant being pursued with less rigour.

5.2.2 Distribution and transfer of costs

Although the Dutch Covenant approach was comparatively economically efficient, there were considerable costs borne by different sectors of society. In particular, costs were faced by municipalities, the packaging chain, and VROM in managing packaging waste. To varying degrees, these stakeholders were able to transfer costs downstream, eventually reaching taxpayers and consumers. Disposers of packaging waste from the KWDI sector faced costs too, but the cost to send their packaging waste to recyclers was often cheaper than disposing via landfill. Thus, their packaging waste treatment costs are part of their private costs incurred

by everyday business, as opposed to being used to maintain the Covenant system.[48] As with the previous section, transactions that are part of the normal market for packaging waste used as feedstock for the recycling industry are not the concern of this section.

A number of activities in managing packaging waste have major expenses associated with them:

- the collection and transport of packaging waste from households;[49]
- the encouragement of recycling in the KWDI sector and household sector using information programmes and infrastructure development;
- research and pilot programmes into improving the handling of packaging waste (including litter);
- research into making packaging more amenable to recycling and into decreasing the environmental impacts of packaging;
- communication between stakeholders;
- monitoring and administration of the Covenant including data collection and treatment, supervision of membership into the different branch organisations, internal communication, and reporting of free riders to the VROM Inspectorate, etc; and
- financing of chain deficits.

In this section, these major activities will be examined, with particular attention on which actors are financially responsible for them, and how these costs are transferred to other stakeholders.

Collection and transport of household packaging waste

During the Covenant period, the responsibility to collect segregated packaging waste from households remained with the municipalities. This entailed the kerbside collection of paper and cardboard, and the provision of bottle banks for residents to bring their glass packaging waste to. The municipality therefore also needed to provide the necessary infrastructure for an adequate collection service. The municipality retained responsibility for transport of the packaging waste to the 'hand over point', at which time the actor in the recycling chain contracted to take the packaging waste took responsibility. Metallic, plastic and wood packaging for households were generally not collected separately from households.

Collection and transport are the main activities required to put the packaging waste in a form that is viable as a tradable commodity. Essentially, the role of the separate collection and transport step is to place the packaging waste in a form that can be bought, processed, and

[48] One of the requirements of the packaging chain was to enact initiatives that made packaging waste recycling more viable for the KWDI sector. The costs of such initiatives are part of the financing need for the Covenant.

[49] Generally speaking, separation activities for household waste did not incur major costs within the Covenant. Paper and cardboard and glass were separated by consumers; plastics were typically omitted from recycling; wood packaging was negligible (and therefore excluded from the Covenant); and metals were separated at the incineration facility (where the cost of this activity was recovered by selling the separated material to the recycling industry).

sold for profit. This perspective explains why only glass, and paper and cardboard, are separately collected and transported. Metals can be more conveniently separated from mixed household waste at an energy recovery plant or materials recovery facility. Most plastic packaging waste from households suffers from a range of contamination problems that confound their recycling feasibility so that industrially generated plastic packaging waste is preferentially treated (as noted in Box 7). Wood packaging volumes for households are negligible.

In contrast to the rest of the recycling processes, the collection and transport steps are very costly (Perchards, 2005, pp. 34-41) and do not, in themselves, generate profit. Under the Covenant, the municipality paid for these steps, either through managing the service directly, or hiring contractors. Ultimately, the funding costs were recovered through the taxation of local residents. Under the Decree, in contrast, the collection and transport costs were transferred to become the responsibility of the packaging chain. Thus, the costs placed on the packaging chain in managing waste will rise sharply in the coming years.

Research programmes, pilot projects, and promotion and encouragement of recovery

The main activities of the packaging chain, represented by SVM ·Pact, in terms of meeting its responsibilities laid out in the Covenant included research programs, pilot projects, and initiatives where the goal was to encourage or promote recovery (including recycling) in both the KWDI and household sectors. Pilot projects included smaller-scaled proposals designed to test novel approaches towards managing packaging waste. Research was directed at finding ways of diminishing the impacts of packaging during its waste phase through improved design, through light weighting, and by developing innovative ways to deliver products to consumers. Research was also applied in understanding consumer behaviour towards the disposal of waste, and in investigating ways in which the packaging industry could better meet its recycling and recovery objectives. Finally, the encouragement and promotion of recovery involved the use of information programmes and the deployment of infrastructure to assist in improving the recycling of packaging waste from all sectors.

These costs were generally on a smaller scale than the transport and collection costs that had been covered by the municipalities (ref.), but were still considerable. SVM ·Pact applied fees to its member companies to recuperate the associated costs.

The packaging industry was not the only group that undertook projects and commitments during the Covenant period. VNG (full name?) was required to encourage higher collection rates for paper and cardboard and glass by the municipalities; to promote household segregation of these packaging waste types; and to encourage municipalities to become active in anti-littering projects. VROM held similar duties to VNG, and was also expected to encourage improvements in packaging waste treatment infrastructure. VROM also assisted in the funding of Stichting Nederland Schoon, Keep Netherlands Tidy, the organisation charged with reducing the impacts of litter. Thus, VNG and VROM also contributed funding and resources to the diverse activities of the Covenant. VNG, for its part, is funded by the fees for voluntary membership paid by local governments; VROM is financed through the national government's budget, ultimately arising from taxation.

Administration of the Covenant

Ongoing organisational, information and communication, and other administrative duties also needed to be financially accounted. The main parties to the Covenant – SVM·Pact, VROM, and VNG – had significant duties in this regard. Some of the duties were broadly similar – reporting to the Packaging Commission and internal and external communication, for example – whereas others were unique to each party. The largest information requirement lay with SVM·Pact, the Monitoring Institute, the member companies (possibly arranged in clusters) and the companies in the packaging material recycling chains. Combined, these actors were required to submit and compile all the necessary data needed to assess the Covenant. Data checking, validation and notification of irregularities in reporting also required resources. But while such expenditures are significant, they are considerably less than the typical costs associated with the collection and transport of household packaging waste.

5.3 Stakeholder responses to the third Covenant

For this part of the thesis, stakeholder views were gathered through a set of interviews with representatives from three interest groups: the packaging organisation Nedvang; the Ministry responsible for the environment VROM; and the environmental movement, embodied by Recycling Netwerk, an NGO dedicated to waste and litter issues. During each interview, the interest group representative was invited to elaborate upon the main themes of the third Covenant and the new Decree, as viewed from their own perspective. It is clear that there are significant divergences in how this policy instrument is viewed. These divergences, along with a discussion of the public acceptance aspects of the Covenant, are discussed in Section 6.5 of the succeeding chapter.

5.3.1 Consumer and environmental interest groups

From the beginning of packaging waste policy and earlier, Dutch NGOs such as the Recycling Netwerk and Stichting Natuur Milieu (The Netherlands Society for Nature and Environment, SNM) have held a prominent interest in the impacts of packaging waste, including litter. Because of this, they remain informed of, and involved in, the issues at stake. Indeed, representatives of SNM wrote the first draft of the First Packaging Covenant, which was strongly endorsed by the public. Since that time, the environmental movement has become increasingly concerned with the way packaging waste is handled in the Netherlands.

- Concerning packaging prevention, the choice to tether the target in the second and third Covenants to the economic growth of the Netherlands introduced a major weak point to the policy instrument. The environmental movement was dismayed that this removed the mechanism to restrict *absolute* volumes of packaging entering the Dutch market each year. Higher performances in recycling were needed to compensate for this, which was not realised: from the perspective of Recycling Netwerk, the packaging waste recycling rate has stagnated since 1998.

- Another issue on recycling brought forward by the representative of the environmental movement was the use of total recycling rates for both households and industry sourced packaging waste. The movement prefers the two social sectors to have separate targets. The reason for this is that with a combined target, industry can avoid managing waste in the more expensive sector, which is usually the household sector. While generators of packaging waste in the private sector, being motivated primarily by costs, require less targeting by the packaging industry to achieve a given recycling rate. As long as recycling is

cheaper than the other options at hand and is actually available as an option, industry will choose to recycle. That is, industry will 'look after itself'. Thus, a combined target represents a missed opportunity to place higher recycling expectations on industry-sourced waste and to make the packaging industry confront waste (and by extension, litter) generated by households.

- From the viewpoint of environmental groups, the third Covenant dealt poorly with litter. Problems with surveying technique were part of the problem, but a study conducted by the research group TNS NIPO (2005) also showed that litter from small bottles and cans had increased greatly during the third Covenant. Neither the Decree nor the third Covenant, it is argued, adequately dealt with litter.

- A major difficulty for environmental groups that focus on packaging waste has been the difficulty in accessing information. It was felt that unnecessary delays, omissions of details, and bureaucratic mismanagement of information requests occurred too frequently. From the perspective of Recycling Netwerk, the packaging industry avoids disclosure of information that it considers to be potentially sensitive. It was viewed that, as it is often hard to assess this sensitivity, the packaging industry organisation maintained a general policy of withholding information from the public. Similarly, environmental groups felt that they had limited opportunities to participate in multi-stakeholder activities unless VROM directly secured their inclusion. On the other hand, the representative of Recycling Netwerk observed that some individual companies were very forthcoming with information and general assistance.

- The environmental movement holds the opinion that data quality assurances were inadequate during the third Covenant. It was felt that the random auditing and data checking were insufficient to deter members of SVM·Pact to understate their turnovers and production volumes. Such underestimations introduce inequity in who pays for the Covenant, and makes the Covenant's performance seem better than it actually is.

- Finally, a deep concern of the environmental groups has been the recent increase in economic power and political influence of the retail sector. This power was seen as being disruptive to the Covenant, which relied on being able to target the producers and importers of packaging products to elicit design change. But retailers, eclipsing the producers and importers, are now the dominant decision-makers in choosing which products are marketed in the Netherlands and yet were only minimally impacted by the Covenant.

The representative of the environmental movement maintains the belief that the earlier years of the overall Covenant period were effective in achieving its objectives, yet growing complacency amongst the packaging chain and the exhaustion of the easier solutions meant that the third Covenant was unable to lead to sustained improvements.

5.3.2 VROM

From the perspective of the Ministry, packaging waste policy has ultimately been fuelled by strong desires by the environmental movement and environmentally conscious political parties to have litter and household waste acceptably addressed. These motivations have been in place prior to the first Covenant (i.e. the late 1980s), and were manifested as a strong desire to see deposit-refund systems for refillable containers in place for all beverage types. Regardless of whether there was sufficient political will at the time for deposit-refund regulations to be enacted, VROM was able to use this public consciousness as an external pressure to push the

packaging industry towards an agreement. In accordance with the national environmental policy at the time, VROM held a preference towards negotiated agreements with industry in dealing with significant environmental issues. The political pressure for imposing responsibilities on the packaging industry granted VROM the opportunity to apply wider ranging targets affecting most packaging types – not just beverage containers. These targets were borne in the First Packaging Covenant. Since then, VROM has noted a range of significant factors relating to the packaging Covenants.

- In particular, VROM views the possibility of a deposit-refund system as the continuing central issue in packaging policy. The threat of such a system has been used as a prominent bargaining tool for the Ministry, and the packaging industry has been willing to go to agree to increasingly stringent targets to avoid such a scheme. For example, VROM was able to set litter reduction targets based on the reduction in litter that a deposit-refund system was expected to achieve, which industry accepted. The VROM representative noted that the packaging industry has been unable to meet such targets in recent years, however.

- Similar to the environmental movement, VROM is concerned by the relative strength of the retailers within the product supply chain. In particular, the buying power of retailers may prevent producers and importers of packaging from transferring the costs of designing for the environment onto the consumer. The retail industry, through its increased political power, also has a greater capacity to influence public policy-making. Significantly, this may weaken the credibility of a threatened regulation for introducing a deposit-refund system.

- Related to this concern, VROM sees packaging and litter as being comparatively politicised issues, and notes that the progress made in placing responsibility for packaging waste on industry is critically dependent on which political parties hold government at the time. This may have contributed to the weakening of the prevention targets and the continued absence of a deposit-refund system.

- The VROM representative holds the view that one advantage of the Covenant period was that it was a relatively cheap instrument to use for managing packaging waste. The representative owed this fact to the use of self-monitoring and aggregation of data within industry, coupled with the extrapolation of this data to furnish nation-wide statistics on packaging waste. The Decree is anticipated to be far more expensive as data should be sourced from all actors involved in packaging.

Like the environmental movement, VROM carries the perception that covenants are no longer suitable for packaging waste in the Netherlands as the most recent Covenant did not yield notable improvements. The representative believed that the earlier years were highly successful, largely due to the presence of easier, more certain options for recycling and preventing packaging. More forceful instruments may now be required and VROM strongly advocates the present Decree as a necessary instrument.

5.3.3 Nedvang

The interview held with the Nedvang representative provided valuable information on the views held by SVM·Pact because this latter organisation evolved into Nedvang as a response to the Packaging Decree entering into force. The packaging industry organisation holds views that are markedly different from the other stakeholders on certain issues pertaining to packaging waste policy.

- Foremost, the packaging industry organisation was in favour of retaining the use of covenants to manage packaging waste. From its point of view, the third Covenant was able to deliver consistently high recycling results. For materials such as glass where the industry was not able to achieve the desired rate of recycling the representative argued that the problem lay with the targets being set inappropriately high, rather than with a lack of performance on behalf of the industry.

- From the perspective of Nedvang the choice to impose EPR for household collection upon the packaging industry was unnecessary. The taxpayers who would ultimately pay for a municipally financed collection are the same citizens who would pay for an industry financed collection as consumers of packaging, they argue. Because the older system worked perfectly, in their opinion, there was no reason for it to be changed to a system using EPR for collection: it merely increases the costs to the packaging industry.

- The many factors associated with the amount of packaging that is sold on the Dutch market makes it extremely difficult to determine a suitable target for packaging prevention. It is therefore appropriate that this parameter is omitted from the Decree, according to the representative from Nedvang.

- The packaging industry organisation appears to downplay the importance of packaging waste in litter, focusing on absolute volumes of packaging-derived litter instead of the amenity lost due to this litter. For this reason, it does not see the point in the setting of higher targets for plastic beverage container recycling in the Decree. By extension, it views a deposit-refund system as being excessively onerous on industry, especially retailers, without yielding a significant environmental benefit.

It is clear that the packaging industry prefers the arrangements applied in the Covenants to the terms of the Decree. The change is viewed as being unnecessarily burdensome to the industry – through the EPR for collection and the new recycling rates for plastic beverage containers – without conferring improvements to the environment.

It is strikingly clear from the stakeholder interviews that there are some disparities over the importances attributed to different issues in packaging waste policy. Moreover, there are strong differences in the way that the third Covenant itself is viewed, in terms of its success and its suitability for dealing with packaging waste. These points will be elaborated upon in Section 6.5.

6 Discussion

In this part of the report, the main issues influencing the performance of the third Covenant are brought forth. An emphasis has been placed on exploring the factors that have constrained the Covenant in meeting its objectives. Issues pertaining to the public acceptance of the policy instrument are also examined. This chapter concludes with a discussion of the ramifications of installing the Decree as the central policy tool to manage packaging waste in the Netherlands.

6.1 Economic efficiency and environmental effectiveness

As shown in the analysis, there is reason to view the third Covenant as a relatively economically efficient way to handle packaging waste. In the earlier years of the Covenant period, the industry was successful in meeting its recycling and prevention targets and therefore met its expected environmental effectiveness. But over the last few years the Covenant did not manifest improved performances: recycling levels and packaging prevention had stagnated below their targets. The environmental effectiveness of the policy tool in its final years is questionable.

The trends in performance in recycling and prevention suggest that the cheaper and easier measures had already been exploited by the packaging industry, and that any improvements would come at a cost that industry did not appear willing to pay voluntarily.[50] Although the targets of the Covenants had been steadily increased with each new version so that incrementing expectations were placed on industry, it is evident that – at some point – the industry was not inclined to apply sufficient resources and efforts to meet them. Lower costs were preferable to better outcomes.

This implies that the packaging industry was at a stage where appreciably higher recycling rates would need significant changes in the measures adopted. And, as the 'lowest hanging fruit' were very likely to have already been picked (Clement, 2006), the remaining measures would be economically unappealing. These measures may have required, for example, large investments in the recycling chain (such as infrastructure to enhance separation); subsidisation of the recycling of materials that are currently unable to compete with raw materials; or the adoption of alternative recovery systems (such as a deposit-refund system for beverages). While the measures would contribute to the environmental effectiveness of the Covenant, they would also incur increased expenses for the packaging chain and a diminished economic efficiency of the policy tool overall.

The ultimate incentive for industry to perform in the Covenant setting, as ever, remained the threat of regulation. However, it is clear that this threat was finally unable to coerce the packaging industry towards expending the required resources to achieve the most recent targets. This would suggest that the Covenant period had 'run its course': it was no longer effective in lowering the impacts of packaging waste. From this perspective, the adoption of the Packaging, Paper and Card (Management) Decree is justified.

The Decree may be considered as a means to 'force industry's hand'. High recycling rates are expected – just as in the Covenant – but now the regulatory threat of a deposit-refund system for beverage packaging has been strengthened. Although such a take-back system has been

[50] For example, the packaging industry had managed to avoid the recycling of plastic packaging waste obtained from households, by predominantly addressing the more cost effective industry-sourced plastic packaging waste.

provisionally written into the Decree, the decision for it to be entered into force depends on the forthcoming recycling performances for plastic beverage packaging. But even if these performances are insufficient, it is still uncertain whether there exists the political will in government to mandate a deposit-refund system.

6.2 Variations in recycling according to material type

The Covenant does not exhibit uniformity with regard to the recycling rates for each of the commonly used packaging materials. A discussion of the differing levels of success for each of these materials is worth engaging in, as a means of isolating the main difficulties faced in the Covenant and exploring some of the strategies that may yield better outcomes. In the following paragraphs the critical issues in recycling each of the main packaging materials are laid out.

6.2.1 Metal

Of the different types of packaging material recycled in the Netherlands, the recycling of metals demonstrates the highest performance (86 % recycled, versus a target of 80 %). This can be understood through a number of features of this material. Firstly, metal has been recycled within industry for a very long time, and so there is a traditional familiarity with this practice in the KWDI sector. Secondly, the metal recycling industry is well established and is able to compete with primary raw materials. Thirdly, there are essentially no requirements placed on households to segregate this waste type, so household compliance is not an issue. Finally, the post-collection separation of metal packaging from residual waste ensures that a large proportion of household-sourced metal packaging waste is captured for reprocessing.

Losses in metal packaging recycling rates traditionally occurred where mixed household waste was sent to landfill due to a deficit in incinerator capacity. However, the very low landfill rates presently achieved in the Netherlands has, to a large extent, corrected this. Remaining losses can be attributed to limitations in the post-incineration capture technology, traces of metal packaging that aren't separated by industry, and losses from uncollected litter.

6.2.2 Glass

The recycling of glass packaging in the Netherlands typically achieves a level of about 75 %, which is significantly less than the target of 90 % for 2005. Like metals, glass recycling has a long tradition and therefore does not suffer from industry and households having to adapt to its separate handling. Although recycled glass is relatively less susceptible to contamination than, for example, plastic and paper and cardboard, its usefulness is dependent on having it separated by colour. This is a barrier to its competitiveness with primary glass. As a response recycled glass dealers have mandated a minimum colour separation rate in some Dutch municipalities, in order for their collection from the municipality to be economically worthwhile.

In the Netherlands, glass is collected using a 'bring' system (bottle banks), which may restrict its recycling rate due to its inconvenience compared to kerbside collection. In 2004, about 71 % of glass packaging waste derived from households was separately collected (Rense Milieu Advies, 2005, p. 4). Further losses may arise from uncollected litter; informal reuse of glass

containers in households and industry; and contamination of the collected glass packaging.[51] According to the Packaging Commission (2005, p. 25), the hospitality industry may also contribute to the diminished glass packaging recycling rates due to some inclusion of disposable bottles with residual waste. The branch organisation for glass packaging, SKG, holds the opinion that the recycling target of 90 % is unrealistically high. But on the other hand, the Packaging Commission views that SKG has not made the most of the available opportunities to improve the recycling rate for this material.

6.2.3 Paper and cardboard

In the Netherlands, the recycling of paper and cardboard has been less successful than either metal or glass. The typical recycling rate of 70 % (for packaging paper and cardboard) is somewhat below the target of 75 % for 2005, and is not improving.[52] The use of kerbside collection for paper and cardboard waste makes separation less onerous for households than for glass packaging waste. However, the collection from households remains low – at only 47 % in 2004 (Rense Milieu Advies, 2005, p. 4) – because paper and cardboard packaging waste is highly susceptible to contamination that makes it unfit for reprocessing. In contrast, recycling of this packaging material from the industrial sector is more successful.

Although the recycling of paper and cardboard packaging exhibits only a shortfall of 5 %, relative to the target level, it should be remembered that approximately half of the packaging entering the market each year is made from paper or cardboard. This material therefore carries significantly more weight in the performance towards the overall recycling target than any other material.

6.2.4 Plastic

As noted in Section 5.1.2, plastic packaging is the most problematic material for recycling in the Covenant. In 2004, only 19 % of the plastic packaging put to market was recycled, compared with the expectation to recycle 27 to 30 % in 2005. An additional recovery target (of 10 to 15 %) was also set, and owing to the extensive use of energy recovery facilities in the Netherlands, this target was comfortably met (see Packaging Commission, 2005).

Box 7 highlighted some of the difficulties in recycling plastic packaging. In the terms of the third Covenant, there was no obligation to collect or recycle plastic packaging waste from households. The exclusive recycling of plastic packaging from the industrial sector is major restriction on the rate achieved, as the potential recycling of plastic packaging from households has not been realised. For some types of plastic waste from this source, it is of questionable environmental benefit to recycle; for others, for example PET beverage containers, the environmental benefits of recycling are more certain.[53] However, the collection

---

[51] Some of the main contaminants that disrupt the processing of recycled glass are materials that have been incorrectly added to this waste stream under the misunderstanding that they are compatible with glass for recycling. For example, both ceramics and pyrex waste are common contaminants that interfere with the melting of glass cullet, a process performed in glass recycling.

[52] The third Covenant has also set a target of total paper and cardboard recycling of 75 %, and a recycling level of 74 % was achieved in 2004. This higher rate, compared with packaging paper and cardboard, is accounted for by the achievement of 78 % recycling for non-packaging paper and cardboard. Nonetheless, the paper and cardboard branch organisation, PRN, was still required to meet the recycling target for packaging, as well as the combined packaging and non-packaging target.

[53] For the record, some large PET beverage containers may be refillable and can therefore be treated in a reuse regime. The rest (i.e. 'one time use' packaging) are predominantly added to mixed household waste, and are thus subject to energy recovery, or incineration without energy recovery.

of plastic packaging from households may be hampered by its low density (making it expensive to collect per unit mass) and its potentially high contamination levels (increasing the risk of rejection from re-processors). Once again, costs are a major issue.

Regarding industrially generated plastic packaging, the Packaging Commission (2005, p. 12) observed that collectors of plastic packaging waste from industry typically charge high prices for this service. A prime motivator for recycling industrial waste is the financial impact on the waste disposer. If industrial waste generators are not provided with competitively priced recycling options, there is a strong incentive to seek other disposal means. In the Netherlands, the bans on landfill (see Box 6) drive unrecycled plastic packaging waste to incineration or energy recovery solutions. Further barriers to plastic packaging recycling in industry may be a lack of awareness about plastics recycling in general, and a lack of knowledge on the plastic recycling options that may be locally available to the waste generating company.

The poor performance in recycling plastics has been a persistent drawback to the Covenant. (It was the only target that remained unmet in the first Covenant.) There are clear measures written into the Decree that may partially address this shortcoming.

6.2.5 Wood

The recycling target during the third Covenant for wood packaging used by industry was 25 %, to be met by 2005. The 2004 result was 33 %, indicating that the packaging chain has not experienced difficulty in meeting this expectation. Wood recycling targets were first set in the Regulations and the second Covenant (15 %). Wood as a packaging material exhibits many of the properties that are amenable to recycling: high density; low contamination rate; easy segregation; stability; and a well established recycling chain. In practice, most industrial wood packaging is designed for reuse (such as pallets and boxes) and has a low environmental impact per usage. Wood packaging, at this point, is not one of the major causes of environmental concern in packaging.

6.2.6 Comments

From this section it is clear that the packaging material with which there has been the greatest difficulty in meeting its recycling target is plastic. Ultimately, costs are a key factor. Industrial generators of plastic packaging waste are not granted the financial incentive to recycle where plastic waste collectors are more expensive than other options. Municipalities face high costs to collect and transport plastic packaging waste relative to other packaging waste streams.[54] Although some household packaging waste is separated after collection, the resulting level of contamination causes it to be consumed for energy recovery. The result is that no plastic packaging is recycled from households, and only a small proportion is recycled from industry. The low recycling rate is unsurprising. Beyond this financing issue, however, the environmental soundness of plastic recycling should be discussed.

A unique difficulty in plastic recycling is that some forms of plastic packaging are intrinsically challenging to recycle using current techniques. In some cases, the environmental benefit of 'phasing out' these types of packaging is uncertain. For example, films and foams are problematic due to their low density and high contamination rates (which is, in itself, a result

[54] Compared with industrial plastic waste (which is concentrated), the transport impacts for collecting plastic packaging waste from households is high and is considered a barrier to this activity (Third Packaging Covenant, p. 123). Post-collection separation from residual household waste, on the other hand, carries a far greater risk of contamination.

of the low density). On the other hand, using such low density packaging material confers environmental benefits through reduced transport impacts during the distribution stage of the product's life cycle. With this in mind, it is likely that there will always be plastic packaging in use that is unsuitable for recycling using modern technology. At this stage, there is little understanding of how much of the plastic packaging marketed is fit for recycling. Efforts should be made to work out how much plastic packaging is worth recycling, from households and industry, so that a scientifically based recycling target can be set. Research into recycling techniques and product design may then function to raise this proportion of plastic packaging for which it is environmentally advantageous to recycle, and the recycling target can be revised accordingly. Much of the leftover plastic waste would then be suitable for energy recovery.

Returning to financial aspects, the greater concern is that industry does not have sufficient incentives to use recycling solutions for plastic packaging, according to the Packaging Commission (2005, p. 12). At this point, it is worth re-examining the explanatory notes of the Third Packaging Covenant regarding this matter:

> *'The aim of the Third Packaging Covenant, of which this sub-covenant is a part, is to increase (plastic) recycling as material to 30%. As in the case of the Second Packaging Covenant, the principal method for reaching this target is for commercial businesses (office, shop, service and industry KWDI sector) to store and dispose of plastic packaging waste separately. The VMK will encourage businesses to do this in a number of ways, including the development and promotion of cost-effective business systems for companies. Processors will encourage the mechanical recycling of KWDI plastic packaging waste by offering a guarantee that waste meeting the specifications laid down in the sub-covenant will be acquired and reprocessed at market conditions.'*

From the cited text, the representative organisation for the plastic packaging chain (VMK) is principally charged with the responsibility of encouraging businesses to dispose of plastic packaging waste separately. But if separate treatment is not a commercially viable solution for industry, it is unlikely that this approach will be taken, irrespective of how much encouragement is given by VMK. The Packaging Commission (2005, p. 12) suggests that this may be the case. But neither the plastic packaging chain nor the plastic recycling chain has been mandated under the Covenant to actually create conditions where industrial disposers of waste have the incentive to recycle (using methods such as artificial pricing, or subsidising industry for separating their plastic waste, for example). The current situation, where only 19 % of plastic packaging is recycled, may simply reflect the economic reality of the present conditions faced by industry. A number of measures by the packaging chain (the aforementioned responsibility to subsidise recycling; or compulsory take-back, among others) or by the public authorities (effective levies on incineration, for example) could correct this, however the third Covenant did not specify such actions. From this perspective, the packaging industry may not have failed in its responsibilities under the Covenant. It is possible that the sub-covenant for plastics, in omitting households and in excessively relying on economic mechanisms, was not suitably designed to deliver the desired outcomes.

The analysis of the plastic packaging recycling performance broadly agrees with the conclusions made from the previous section. That is, the third Covenant, in its allocation of responsibilities and in its reliance on market solutions, has granted a somewhat limited success in meeting its objectives.

6.3 Challenges in controlling litter

One of the main differences between the third Covenant and the preceding Covenants was the introduction of a sub-covenant for managing litter. This inclusion also marked a

broadening of the ambitions of the Covenant as a policy tool. The earlier Covenants were concerned with minimising the impacts of packaging waste disposal and the resource intensity of packaging production. The third Covenant continued with these concerns, but the addition of a litter sub-covenant explicitly acknowledged the need for public amenity issues to be addressed (see Bergsma *et al.*, 2001, pp. 5-6 for the importance of litter as a source of public annoyance in the Netherlands). A major component of the perceived annoyance stemming from litter – as distinct from the absolute volume of litter – is small bottles and cans. It is therefore sensible to involve the packaging chain in the management of litter. Moreover, this is in agreement with the concept of EPR, which is professed to guide policy-making on waste in the Netherlands.

The inclusion of a litter sub-covenant accords well with the Dutch policy goals on packaging waste. But as will be discussed in the following paragraphs difficulties arose in its implementation, so that different approaches had to be sought in the Decree.

6.3.1 Failures in monitoring

The packaging chain was directed, acting through the organisation Keep the Netherlands Tidy (SNS), to engage in activities aimed at reducing the amount of small cans and bottles in litter. As mentioned in Section 4.3, the chosen method to monitor the success of these activities was flawed. Specifically, monitoring was to proceed by conducting surveys with purchasers of small bottles and cans to estimate what proportion of their packaging became litter. Knowledge of the entire volume of these goods entering the market would permit the determination of the total volume of small bottles and cans that became litter. The difficulty with this technique lay in the respondents' poor estimates of their littering behaviours. That is, there was a disconnection between their *stated* behaviour in littering with their *practised* behaviour: respondents' statements could therefore not be used as indicators for littering behaviour. Moreover, when this difficulty in monitoring first became known, the parties were subsequently unsuccessful in developing a more reliable monitoring alternative. As observed by the Packaging Commission (2005, p. 31) the lack of certainty in the monitoring of small bottles and cans means that the success of the littering sub-covenant in this area cannot be evaluated. It follows that there cannot be any confidence in the management of this component of litter by the sub-covenant, and this finding is supported by other research (TNS NIPO, 2005).

A second objective of the litter sub-covenant was to achieve a reduction in the amount of 'other litter', (i.e. litter other than small bottles and cans). This was the responsibility of VROM and VNG, acting with the Dutch municipalities. As with the other litter sub-covenant objective, difficulties in monitoring (Packaging Commission, 2005, p. 32) precluded the possibility of evaluating its success.

6.3.2 Alternative measures to confront litter

From the previous section it is clear that the monitoring approach was unsuccessful, and more importantly, it is clear that packaging litter holds intrinsic obstacles against monitoring. This was especially problematic as the overall strategy adopted by the third Covenant was highly reliant on accurate litter information. This reliance ultimately stemmed from the use of 'soft' instruments – education and information programmes, the deployment of public infrastructure to counter littering and so on. The problem is that although these measures clearly facilitate the correct disposal of litter, they are less certain of motivating society to dispose of litter correctly. Making the proper disposal of waste easier does not equate with improving the incentive to do so. Having less certainty in society's behaviour increases the

need for accurate monitoring simply because the policy-makers have a greater need to check that their intended consequences are indeed occurring in practice. Ideally, a policy against littering should carry a component of incentive creation, and a component that serves as a mechanism to assist society to 'do the right thing'.

An answer may lie in the use of instruments that are more certain to produce a desired outcome in the behaviour of society towards litter, thereby diminishing the necessity for directly monitoring public behaviour. This greater certainty may be conferred through providing personal incentives for people to change their behaviour. Clearly, economic incentives offer one solution. While littering has traditionally been penalised using personal fines, this approach will only disincentive littering according to the citizens' perceived probability of getting caught.[55] Positive economic incentives, on the contrary, carry greater assurance that people will behave correctly as this 'probability of being caught' qualifier is not a factor. Conveniently, one such incentive scheme that may deliver incentives against the littering of packaging waste is a deposit-refund system (discussed in Section 6.6.2).

6.4 EPR and the third Covenant

The theory of EPR centres on the idea of placing responsibility (financial, physical or information) for the post-consumption part of a product's life cycle onto the producer of that product. The motivations for doing so are two-fold: to internalise the management costs of the product as waste such that there is an economic incentive for product design that considers this stage of the product's life cycle; and to transfer the responsibility (and associated costs) for the product as waste away from municipalities and to the production chain itself. The second reason ties into the notion of environmental equity, for enacting EPR should permit the cost of the waste management phase to be covered by actors that are directly involved (as producers, distributors, consumers etc.) with the product, as opposed to having the costs covered by municipalities and their taxpayers.

With this mind, the elements of EPR encapsulated in the third Covenant were limited. Firstly, the municipalities retained the financial and physical responsibility for the collection and transport of household packaging waste (paper and cardboard; and glass). Secondly, industrial disposers of packaging waste were charged, under the Covenant, to be responsible for their waste up to the point of transfer to the recycling industry. Thirdly, the role of the packaging chain was limited to facilitating the recycling of packaging material, which was physically carried out by the recycling industry operating under market conditions.

As such, the packaging chain itself was neither physically nor financially responsible for any of the stages necessary for recycling packaging. These are the take-back or collection; the transport; and the recycling of waste into useful material. The packaging chain was expected, however, to influence the parties responsible for each of these activities in order that the recycling objectives of the Covenant were met.

The facilitation activities included many initiatives, including the fostering of recycled material as feedstock in preference to raw material; design changes to enhance recycling; 'light-weighting'; and investigating ways of promoting recycling by industrial generators of packaging waste. Although the packaging chain was ultimately responsible for meeting the objectives of the Covenant, the recycling performances critically depended on the packaging

[55] There may, in addition, be an element of moral coercion exercised through the social stigma of being fined for littering. Conversely, penalties may encourage some 'rebellious' elements of society to litter more often.

waste being sufficiently economically interesting to make recycling worthwhile. The environmental effectiveness and economic efficiency of the Covenant were a natural consequence of this feature. In the Covenant, if a packaging waste stream was not economically feasible to recycle, then it would not be recycled at all. Thus, the maximum possible recycling rate could not exceed the maximum *economically feasible* recycling rate in the Covenant setting. The system would retain economic efficiency at the expense of environmental effectiveness. This contrasts with other packaging recovery systems, for example the Green Dot System managed by DSD in Germany, wherein DSD is required to take back packaging waste even if it is not profitable to do so.

Packaging prevention was a goal that was internalised in the third Covenant. The packaging industry achieved some success in this area, although it failed to meet the objectives set. The packaging prevention target, in a sense, functioned as a proxy to installing EPR for collection, transport and recycling of packaging waste, in that the costs of these activities would naturally direct the packaging chain to initiate packaging prevention actions. But the packaging prevention objective of the Covenant could not replicate the full financial incentives of EPR for these waste management activities, as revealed by the failure of the packaging chain to meet its prevention target. A further consequence of this is that the collection and transport of packaging waste, in being retained by government entities (or their sub-contractors), may have been under less pressure to become cost efficient than if the packaging chain were responsible.

The Covenant period can be viewed as an application of 'light' EPR in packaging waste policy. The responsibilities for the packaging chain were light in comparison to how intensive they could have been, and in comparison to cases in other countries such as Germany.[56] A major repercussion of this was that there was no mechanism to treat packaging waste that was economically uninteresting, and it was not required that the packaging chain take measures to greatly alter this.[57] The performance of the Covenant was thus impaired. The Packaging, Paper and Card (Management) Decree demonstrates a deeper commitment to EPR by granting producers responsibility for household collection for the first time. This will be described in Section 6.6, amongst other issues relating to the Decree.

6.5 Public acceptance and the third Covenant

Particular aspects of the third Covenant were resisted by the more environmentally conscious sectors of society, as detailed in Section 5.3. Prevailing concerns were directed towards the progressive weakening of the prevention targets; the poor handling of litter impacts from packaging; and the failure of the third Covenant to induce higher recycling rates. Notably, these concerns confront the core reasons for establishing the Covenant in the first place. It can therefore be said that the environmental movement had very low confidence in, and acceptance of, the third Covenant.

Moreover, the environmental movement was especially frustrated with obstacles to information access associated with the Covenant. These obstacles prevented the movement from gaining a clear picture of the way the Covenant was being implemented, and from being

[56] On the other hand, an approach which minimises interference with the normal functioning of private enterprise does parallel with the traditional Dutch approach to public policy making.

[57] Recall that the packaging chain, in the Covenant, had a duty to promote and encourage recycling in the household and industrial sectors, but this did not extend to direct manipulation of the recycling market through, e.g subsidising various activities in the recycling chain or entering the recycling market itself. Clearly, the packaging chain was required to exert some influence, or the Covenant would be futile. But this influence was very limited.

included in and informed of major developments. From a perspective of open government, impediments to information access stymie the legitimacy of public policy. This is especially important in the context of negotiated agreements, as a theoretical background for this instrument is lacking. Such theory could otherwise confer confidence on the policy tool where specific data is absent.

At this point it is difficult to estimate the level of satisfaction held by the wider Dutch community, although it is clear from Bergsma *et al.* (2001) that litter is an issue of concern for the general population. The third Covenant was essentially ineffectual in addressing this problem.

The packaging industry group, on the other hand, downplays the magnitude of packaging littering as an environmental issue. A possible motivator for this is that litter is a factor that can be used to leverage support for a deposit-refund system (see Section 6.6.2). The packaging chain, in being highly resistant to this system, has an incentive to understate the role of packaging in litter and the overall impact of litter on societal wellbeing.

Of the three stakeholders interviewed, the packaging industry was the only one to retain support for the third Covenant. This stance concurs with the central idea behind negotiated agreements, i.e. that industry will generally accept agreements in preference to other regulatory instruments that may impose greater burdens on industry. So this attitude is expected. The Ministry and the environmental movement, meanwhile, view the third Covenant as having failed to deliver its objectives in hindsight. The replacement of the Covenant with the Decree, from the perspectives of the Ministry and the environmental movement, is therefore justified.

6.6 Introduction of the Decree

In 2005, the Packagings, Paper and Card (Management) Decree was published, detailing new laws on the management of packaging, paper and cardboard, and their waste. The stated aims of these laws (the Decree, p. 10) were to reduce the amount of packaging as much as possible, to promote the useful application of its waste, and to prevent litter. As in the third Covenant, the coverage of litter makes the Decree more broad in its goals than the Packaging Directive of the EU and the earlier Regulations, which were repealed by the Decree. However, no single Article is explicitly designed to treat litter – reduced littering is seen more as a general outcome of the Decree. The option for companies in the packaging chain to meet their obligations through membership with an administrative organisation that is functionally similar to SVM ·Pact is also encouraged by the Decree.

A number of factors contributed to the need for the Decree:

- the third Covenant would expire imminently, and the agreement of a new Covenant was not certain;
- the Packaging Regulations had obsolete recycling targets;
- the Dutch preferential treatment of refillable beverage containers was viewed by the European Community as being problematic for the European market;
- should the litter sub-covenant of the third Covenant be unsuccessful, there was the need for alternative regulatory mechanisms for managing this concern; and

- VROM desired for producers and importers to assume responsibility for the collection and transport of household-derived packaging waste, to be closer to the forefront of packaging waste in Europe.

Many of the Articles of the Decree were entered into force on 1 January 2006, although the Articles that specifically relate to the installation of a deposit-refund system for beverage containers are yet to be implemented. The packaging industry, as in the Covenants, has been permitted to pursue the new targets for recycling beverage containers in its own way for the moment. The Dutch government remains reluctant to enforce a deposit-refund scheme that may be financially onerous to the retail sector.

The Decree is also notable in that a specific target for packaging prevention has not been set, which contrasts with the Covenants. In the explanatory notes it is declared that, should the material reuse[58] targets be met, such an explicit prevention target would be unnecessary. A general practice of packaging prevention is still expected from the producers and importers, however.

In this section of the Discussion, the major changes brought on by the Decree will be examined, with a view to explore their consequences for the packaging industry.

6.6.1 Extending EPR

The application of EPR to the collection of packaging waste sourced from households is the first instance of placing responsibility for one of the stages in recycling onto the producers and importers of packaging in the Netherlands. During the Covenant period, a form of producer responsibility was in place, but this pertained to the reaching of the recycling and prevention targets – producers and importers were not required, physically or financially, to engage in any of the activities that are necessary for recycling (such as collection, transport, re-processing for 'material reuse'). From the Decree, the role of the producers and importers, now organised by Nedvang, grew from being facilitative and administrative to being directly involved in recycling.

The most immediate consequence of this policy measure is the significant increase in costs for the producers and importers of packaging. Collection and transport of packaging waste from households incurs a considerable financial loss. But this cost, although unwanted by producers and importers, is essential for the overall strategy of EPR. To limit financial losses, producers and importers are expected to make their packaging more amenable to collection (to keep collection costs low), and more readily recyclable (to increase the price of the collected packaging waste sold to the recycling chain).

Plastic packaging, once more, presents its own problems for the packaging industry. As seen earlier in this chapter, plastic packaging waste is expensive to manage in comparison to other packaging materials. PET and HDPE beverage containers are the more environmentally benign and affordable plastic packaging types to treat. But currently they are taken from households to only a limited extent. Article 4 of the Decree, meanwhile, mandates that 95 % of the plastic drinks packaging with volumes greater than 5 decilitres and 55 % of the plastic drinks packaging with volumes less than 5 decilitres be collected and reused as material. Producers and importers are in the challenging position of having to meet these targets

[58] The language of the Decree departs from that of the Covenants significantly, introducing new terms that are broadly analogous with terms used in the Covenants. In particular, instead of 'recycling', the Decree refers to 'reusing as a material'; and the Covenant term 'recovering' has been supplanted with 'putting to good use'.

according to their own strategy, which will require the development of an expensive collection and / or sorting strategy for plastic packaging from households. Such systems have only been used on a very small scale in the Netherlands so far, although Nedvang intends to operate its first post-separation plant for plastic packaging waste in late 2007.[59] Producers and importers face strong incentives to make their plastic packaging waste strategies work: failure to meet these recycling objectives risks the imposition of a deposit-refund system in future (see the following section).

The manner in which producers and importers are to take responsibility for the collection of packaging waste has not been determined by the Decree. They are encouraged to enter into consultation with the municipalities to plan mutually satisfactory solutions (the Decree, p. 12). It has similarly been advised by VROM that the pre-existing collection infrastructure be used effectively. To do so would naturally correlate with Nedvang's philosophy of seeking economically efficient solutions.

On the topic of costs, it is noted that the responsibility for the collection and sorting of household packaging waste as used in the Netherlands is still relatively low. This is because the producers and importers need only concern themselves with outlaying sufficient infrastructure and services to meet the recycling targets, and can therefore focus on the most economically efficient municipalities. In comparison, in Germany, DSD is required to provide these services throughout the country. While recycling targets are set for packaging waste in Germany, there is also the expectation that separate collection of packaging waste be performed wherever it is practical to do so, irrespective of the associated costs.

6.6.2 Beverage packaging and a deposit-refund system

Although the Articles in the Decree that relate to a deposit-refund system for non-refillable beverage containers have not yet entered into force, it is interesting to examine this initiative with regard to the issues that it addresses. The actors involved in packaging, especially retailers, regard this system as highly undesirable. This adverse view from the regulated industry exposes the provisional Articles as a highly proximate regulatory threat.

The recycling of plastic packaging

An ongoing concern within the management of packaging waste has been the difficulty in obtaining high recycling rates for plastic packaging. Problems exist from both the industrial and household sectors. Over the Covenant period (1991-2005) it was agreed that recyclers did not need to address household-sourced plastic packaging, with the result that disposable plastic beverage containers were not treated even though this omission was environmentally malign. Unfortunately, the exclusive treatment of plastic packaging from the industrial sector did not allow the Covenant's goals of 27 to 30 % recycling to be achieved. Improvements in plastic recycling require that the recyclable component of plastic packaging from households be treated, and that efforts in the industrial sector be increased. As PET and HDPE plastic beverage containers are among the most fit for recycling of all plastic packaging types from households, it was deemed appropriate to apply specific recycling targets for these items in the Decree. An inability to meet these targets would indicate that the ambitions for plastic packaging recycling in the Decree would be unmet, and a deposit-refund system would be prescribed by necessity.

59 This intent is voiced in the website for Nedvang, http://english.nedvang.nl/Nedvang [Accessed on 31 August 2006].

Litter

The issue of litter has already been covered in considerable detail in this chapter (Section 6.3). As noted, a major concern is the amount of small bottles and cans disposed of incorrectly, and the concomitant loss in public amenity. The targets for plastic beverage container recycling, should they be met, may reveal a solution to this litter problem as more recycled containers may mean fewer of them are littered.[60] But this solution is only partial because the targets do not include new targets for cans, and no other major regulatory changes have been put in place that would alter the recycling of metal packaging (which includes beverage cans). The plastic beverage container recycling targets would do very little in reducing cans in litter or, for that matter, any other packaging in the litter that is not a plastic beverage container. For this reason, the public information and education endeavours and other anti-litter initiatives already undertaken by SNS, VNG and VROM would still need to be up-scaled. And, as previously mentioned, it is difficult to measure with confidence the effects of these activities on litter.

On the other hand, the deposit-refund system as laid out in Article 8 of the Decree includes different beverage container types, including cans. Moreover, this system includes an economic incentive component that should reduce littering of all beverage containers. In addition, the return rates of each of the different container types can provide a more certain indicator of their attributed littering levels than consumer surveys would.[61] Bearing these factors in mind, a deposit-refund system would theoretically be very effective in treating litter from beverage containers. However, such systems do place a considerable burden on the private sector, and there may also be practical issues that weaken their performance in practice (see below).

Refillable containers and the European market

A final issue that a deposit-refund system may address centres on refillable beverage containers used in the Netherlands. Although the Packaging Directive favours reuse systems of packaging, some methods of safeguarding the proportion of reusable packaging is viewed by the European Commission as conflicting with free trade within the European market. In the producers and importers sub-covenant (reuse protocol), the beverage industry was prohibited from bringing new beverages enclosed in 'one time use' packaging onto the Dutch market unless it could be proven that such packaging was no less harmful than refillable packaging, or unless it contributed a very small minority of the overall volume of beverages brought onto the market by that company. Similarly, beverages that were already marketed in the Netherlands in refillable packaging were forbidden to convert to 'one time use' packaging. The European Commission judged these requirements as being unfairly disadvantageous to foreign producers. As a response, the Decree does not hold such requirements. Instead it was found during an investigation (the Decree, p. 15) that if certain recycling rates were achieved with disposable beverage containers, then this would satisfactorily offset the negative environmental impacts from being unable to safeguard refillable packaging. These rates are summarised in Article 4 of the Decree, and are rather stringent. If these rates are not achieved, the public authorities may respond by implementing the deposit-refund scheme.

---

[60] Note that this is not suggesting a 'cause and effect' relationship between higher recycling of beverage containers and reduced littering of this packaging type. Rather, if there are initiatives that are able to achieve the desired recycling rates, an agreeable side effect may be a reduction in beverage containers in litter.

[61] Recall that the litter sub-covenant in the third Covenant made use of consumer surveys for monitoring, which were deemed as unreliableby the Packaging Commission.

The plastic beverage container recycling targets are applied to confront a spectrum of waste issues including litter; the low recycling performance of plastics; and the foregone benefits of a high proportion of refillable packaging. This intersection of concerns therefore makes beverage container recycling such a high priority for VROM that the Ministry has chosen to reinforce the targets with legislation for a deposit-refund scheme, regardless of its unpopularity with industry. This legislation is yet to be entered into force, pending the recycling performances attained by the packaging industry.

Barriers to a deposit-refund systems in the Netherlands

The above paragraphs are indicative that a deposit-refund system can yield the desired outcomes regarding beverage packaging. But to suggest that these outcomes are a foregone conclusion in practice may be overly simplistic. For example, a typical modern model for these systems hinges upon the deployment of automated Reverse Vending Machines (RVM) in the retail outlets that sell packaged beverages. Although systems like this have demonstrated marked success in the northern European countries (such as Sweden, Finland and Norway), Perchards (2005, pp. 124-141) has isolated a number of factors that may limit their suitability elsewhere. The following factors may hold significance for a deposit-refund system in the Netherlands:

- The floor space in a typical Dutch supermarket is small, owing to the high population density of the country. As a result, the use of RVMs could take up a comparatively high proportion of retail floor space in the Netherlands. Such smaller supermarkets may also be disproportionately affected regarding the labour costs necessary in handling a take-back system.

- The Netherlands has a large proportion of its retail market consisting of smaller independent convenience stores and shops, as opposed to large retail chain stores and state-run monopolies for alcoholic beverages. This increases the effort to negotiate, and may increase the risk of free riders who are unwilling to take back beverage packaging. An unwillingness to take back the packaging waste, as well as increasing the burden on compliant businesses, may encourage the consumer to litter.

- Finland, Sweden and Norway all have state-owned monopolies for the retail sale of alcoholic beverages. This can ensure that a high proportion of products sold, such as canned beer, is compliant with the requirements of a deposit-refund system.

Beyond these specific points there is also the more general question of whether the littering and disposal practices and inclinations of Dutch society are sufficiently similar to these other countries, such that a high degree of confidence can be attached to deposit-refund systems.

In addition to concerns of whether deposit-refund systems are appropriate in the Dutch context, there is also the matter of political will. The imposition of a system has been on the agendas of VROM and of the environmental movement in the Netherlands even before the Covenants were first installed (Clement, 2006). However, the politically significant retail industry has successfully resisted this intent, and will continue to do so indefinitely. One can imagine that the retail industry and its allied industries have become adept at arguing against deposit-refund systems. Thus, regardless of beverage packaging recycling performances and of the provisional Articles of the Decree, the strong industry-based opposition may deny this reality indefinitely. A crucial factor lies in which political parties hold government, as it is clear that some major parties strongly endorse deposit-refund systems while some are against them.

7 Conclusion

The goals of the third Covenant dealt with the prevention of packaging; the recycling of packaging; and the reduction of litter. A final examination of each of these objectives is warranted, to gain a final assessment of how successful the Covenant was, and how the Decree may change things. In this concluding chapter, the factors that played important roles in the performance outcomes of the third Covenant are concisely laid out.

7.1 Packaging prevention

The Covenant did not have its objective met in packaging prevention, with only a partial decoupling of packaging volumes from growth in GDP. Packaging prevention is, in itself, a challenging issue to manage. There is no question that a minimum amount of packaging is required for the protection, storage, transport and marketing of products. On the other hand, so much packaging is superfluous. The packaging industry is able to directly influence some aspects of packaging volumes, such as reusability,[62] weight per packaged product, and usage of unnecessary packagings. But other aspects, such as purchasing patterns and consumer behaviour are more difficult to control. Tethering the prevention target to growth in GDP is also problematic in that it is hard to predict how consumers act during periods of higher economic development, and how overall packaging is affected. For instance, where higher GDP corresponds to increased disposable incomes, one could expect more luxury goods being purchased and greater overall packaging volumes. Yet in contrast, would a doubling of GDP per capita correspond to twice as much food consumed, and twice as much food packaging used? Ultimately, these issues make it difficult to set an appropriate target for packaging prevention, and they make it difficult to judge whether the packaging industry should have done more. Yet the importance of this component of packaging policy necessitates that setting a prevention target is far better than having no target, even if the level's appropriateness is difficult to evaluate. Importantly, targets should aim to reduce the absolute volume of packaging entering the market, so that the impacts arising from packaging waste are also reduced in absolute terms.

In the Decree, there is no explicit quantitative target for the prevention of packaging, which indicates that this element of packaging waste policy has been de-prioritised. From the explanatory notes, the EPR for collection and a generalised responsibility placed on the industry to restrict packaging has been judged as sufficient mechanisms for reducing packaging volumes. However, this is a significant weakening of packaging waste policy. A reduction in the absolute impacts of packaging upon resource usage and landfill volumes can only be achieved if a combination of recycling and prevention is practised. The ultimate motivators for packaging waste policy are therefore only partially addressed in the Decree.

7.2 Recycling

From the Discussion it was clear that sound performances were achieved for some types of packaging waste recycling, but not for others. The aggregate target was not met and, more significantly, the observed recycling rates generally did not undergo improvements during the lifetime of the third Covenant. The point of the Covenant was not to retain existing recycling

[62] Reusability contributes to diminished packaging volumes in that a packaging is only included in packaging volumes when first brought onto the Dutch market. As more reusable packaging replaces 'one time use' packaging, the overall volume of packaging decreases (if all other factors remain equal).

levels, but to improve them – new policy instruments are not brought in merely to maintain the status quo. Thus, although packaging waste recycling was no worse than during the earlier Covenants, the third Covenant failed in this regard.

The problem did not lie with the recycling targets themselves. On the contrary, the overall setting of responsibilities was flawed. The packaging industry could exercise selectivity in which sectors of society were targeted so, for example, plastic packaging waste from households was overlooked based on its cost. But when it became clear that targeting industry alone for plastic packaging waste was insufficient, this failed to compel the packaging industry to alter tactics to gain better performances. It suggests that the packaging industry had become complacent to the regulatory threat behind the Covenant. There was simply no motivating force to get the industry to improve recycling of this material. Moreover, the packaging industry was issued strictly with an enabling role with regards to recycling, yet the shortfall in recycling performance may have been factored by issues outside of this role.

A related obstacle was the overt reliance on market forces to drive recycling performance. Packaging waste that could not be economically recycled using the technology at hand remained untreated, and the Covenant had no mechanism in place to compensate for this.

In the Decree, the recycling targets for the packaging materials are largely unchanged. Targets for plastic beverage packaging have also been set, with the intent to address littering; the low recycling rate of plastics; and the decreasing proportion of refillable containers on the market. Producers and importers are explicitly expected to deal with plastic packaging waste from households (through the EPR for collection and sorting). Provisional legislation is also in place for a deposit-refund system, which may renew the perceived threat of regulation should the recycling performances be dissatisfactory. But to date, the packaging industry has held off this take-back scheme for fifteen years: the motivational aspect of such a scheme is hardly assured.

7.3 Litter

Litter was poorly addressed in the third Covenant. The monitoring regime to measure the effects of the litter sub-covenant on small bottles and cans was unworkable and no satisfactory alternative was developed. Although it was commendable to broaden the scope of the Covenants by including this sub-covenant in the third agreement, the result of the implementation was inadequate.

Beyond the monitoring failure, it is uncertain whether the initiatives undertaken by the organisation Keep the Netherlands Tidy in education programmes and public information strategies had any effect on the public's littering habits. It is certainly extremely unlikely to have achieved the goal of reducing litter from small bottles and cans by 80 %. An important component that was absent from the initiatives was that of public incentives to decrease littering. Public visual amenity, in being a 'common', was unlikely to be restored to the levels demanded by the third Covenant by working purely from a public information perspective.

The Decree does not explicitly treat littering. The previously mentioned targets for plastic beverage containers may lead to some improvements, but should not affect litter from cans or from other packaging waste. So, on the whole, the Decree as it presently stands will have a minimal impact on litter. If the deposit-refund scheme Articles were to enter into force, this could change dramatically. The scheme applies to almost all beverage containers, so non-plastic beverage container litter would be covered. But more importantly, the refund for returned containers would provide the critical economic incentive element that has been

lacking from anti-littering strategies to date. It remains to be seen whether the deposit-refund system Articles of the Decree will be enacted.

7.4 Overall assessment

The third Covenant manifested significant shortcomings with respect to the objectives discussed above. For these reasons it was correct to terminate the Covenant period in packaging waste policy. This view is maintained by the Ministry and by the environmental movement. The granting of flexibility in the measures taken by producers and importers was not conducive to improved performances relative to previous Covenants. In particular, it is clear that solely relying on the most economically efficient solutions and on the economy for recycled waste had reached an upper limit using current techniques and approaches.

It should be noted that the overall Covenant period (1991 to 2005) did have its successes. Recycling rates greatly increased and packaging volumes were clearly reduced during the earlier Covenant years. However, perhaps through growing complacency towards regulatory threats and through depleting all the easier options, the improvements slowed. The period of the third Covenant was then largely a period of performance stagnation: it was incapable of inducing the desired behaviour from industry. A contributing factor is that the third Covenant placed few additional requirements on the packaging industry as the Covenant progressed. Thus, even as the objectives of the Covenants became more stringent, the packaging industry was mainly expected to continue its role of promoting and facilitating recycling and prevention. Such a limited role, in the absence of other drivers, could not ensure full recycling in the Dutch context, and a performance ceiling was reached.

The Decree has, for the most part, now entered into force. But other than the inclusion of plastic beverage container recycling targets and EPR for household-sourced collection of packaging waste, there have been few real changes. The use of the new targets critically hinges upon how seriously the packaging industry treats the threat of the deposit-refund system in the remaining Articles of the Decree. Meanwhile, EPR for municipal collection represents a milestone for packaging policy in the Netherlands, as producers and importers are finally mandated to take financial responsibility for one stage of the recycling process. Thus, the industry may be influenced to make design changes that facilitate collection in order to reduce their costs for this activity. However, other major aspects of packaging waste – such as volumes going to incineration – remain outside the scope of packaging EPR in the Netherlands. These aspects fail to become design and production considerations for the packaging industry for the time being. It could be contended that the producers and importers should be responsible for the incineration charges for all the packaging marketed in the Netherlands that is not recovered. However, like the provisional deposit-refund system, the application of such an idea remains a question of political will.

One of the drawbacks of performing a case study is that there are inherent limitations in generalising upon the phenomena examined. This arises from the context-oriented approach of case studies and from the exclusive examination of a single case. Case studies simply do not provide the statistical rigour found in other research methods. Thus caution is essential when extrapolating from this research. Nonetheless, the following findings may be insightful in drawing broader conclusions on negotiated agreements:

- The earlier years of the Covenant period for packaging waste bore greater successes than the later years. This suggests that negotiated agreements may only be environmentally effective for a limited duration, as the initial regulatory threat dissipates and as the performance requirements on the targeted industry escalates. While a natural response

would be to impose higher levels of responsibility or an expansion of duties onto the industry with each successive agreement, it is logical to expect that the industry would eventually reach a point where it is no longer proactive towards the terms given. At such a point, a negotiated agreement is unworkable.

- Similar to the point raised above, negotiated agreements may only grant a limited capacity to install EPR on the producing industry. In order to secure the participation of industry in an agreement, public authorities may face constraints in the transfer of responsibilities to the private sector. Negotiated agreements, by extension, may disfavour cost allocations to industry (see Section 5.2.2). The third Covenant in the Netherlands was a case in which responsibilities imposed on the packaging industry were very light. It was only after the introduction of the Decree that EPR for collection of municipal packaging waste could be placed on the producers and importers of packaging.

- As discussed in Section 5.2.1, it is evident that the Covenants were a comparatively economically efficient means of treating packaging waste. The high degree of flexibility conferred on the packaging chain permitted the industry to focus on the less expensive strategies to meet its objectives. Yet the less expensive strategies are not always the strategies that deliver the greatest environmental benefit. Moreover, as performance expectations rise there is a potential conflict between environmental effectiveness and economic efficiency: the relatively soft sanctions of negotiated agreements may result in industry sacrificing its performance to keep costs low.

With these points in mind, negotiated agreements may be suitable for specific contexts. This case study suggests that negotiated agreements work best as an early policy instrument for a given environmental issue, where environmental improvements may be less costly to industry and the responsibilities placed on industry are 'light'. A regulatory threat is essential to promote compliance from the industry in its entirety. This threat should be matched with onerous regulations and enforcement for non-signatories to the agreement to ensure that the preferred option is to join the agreement.

The case study is strongly indicative that the gains made during a negotiated agreement will not continue indefinitely. However, this does not imply that satisfactory performance levels cannot be achieved during a negotiated agreement. Rather, it suggests that if the public authority is driven to impose ever-increasing targets requiring escalating efforts from industry, then a performance ceiling is likely. The public authority should anticipate this with effective monitoring and should be ready to impose a new instrument if it is warranted. In this sense, negotiated agreements may function as a preliminary step in an environmental policy progression: they could be used as a means of introducing an industry to control in a manner that is relatively less adversarial, while permitting an exploration of different solutions to the problem at hand. Policy-makers should recognise that this softer exploratory tool will have a limited lifetime of effectiveness and use the knowledge gained during its application to shape the succeeding policy instrument.

Bibliography

Sources other than legislation and policy documents

Barde, J.-P. (1994). *Economic Instruments in Environmental Policy: Lessons from the OECD Experience and their Relevance to Developing Economies.* Paris: OECD.

Bartelings, H., van Beukering, P., Kuik, O., Linderhof, V. and Oosterhuis, F. (2005). *Effectiveness of landfill taxation.* Amsterdam: Institute for Environmental Studies.

Bergsma *et al.* (2001). *Collection and reward systems to reduce litter: Three concepts.* Delft, the Netherlands: CE.

Cabugueira, M. F. M. (2001). Voluntary Agreements as an environmental policy instrument – evaluation criteria. *Journal of Cleaner Production, 9,* 121-133.

Clement, K (2006, 4 July) Personal interview.

Cunnigham J. A. and Clinch J. P. (2005). Innovation and Environmental Voluntary Approaches. *Journal of Environmental Planning and Management, 48 (3),* 373-392.

De Hoog, M. (1998). Environmental agreements in the Netherlands: sharing the responsibility for sustainable industrial development. *Industry and Environment, 21(1-2),* 27-30.

Dröll, P. (1998). Environmental Agreements: the European Commission's policy and programme. *Industry and Environment*, 21(1-2), 10-15.

Ecolas N. V. and Pira International (2005). Study on the Implementation of Directive 94/62/EC on Packaging and Packaging Waste and Options to Strengthen Prevention and Re-Use of Packaging – Final Report. [Online.] Available: http://ec.europa.eu/environment/waste/studies/packaging/050224_final_report.pdf [6 July 2006].

EEA (1997). Environmental Agreements – Environmental Effectiveness. *Environmental Issues Series No. 3*, *Vol. 1-2*, Copenhagen: EEA.

EEA (2006). *Paper and cardboard – recovery or disposal?* Copenhagen: EEA.

Field, B. C. and Field M.K. (2002). *Environmental Economics: An Introduction, 3rd Edition.* New York: McGraw-Hill.

Golombek R. and Moen E. R. (2002). Do Negotiated Agreements Lead to Cost Efficiency? *Journal of Economics, 76(2),* 101-122.

Hannequart, J.-P. (Ed.) (2004). *Good practices guide on waste plastics recycling: A guide by and for local and regional authorities*. Brussels: Association for Cities and Regions for Recycling.

Hildén, M., Lepola, J., Mickwitz, P., Mulders, A., Palosaari, M., Similä, J., Sjöblom, S and Vedung, E. (2002). *Evaluation of environmental policy instruments – a case study of the Finnish pulp and paper and chemical industries.* Vammala, Finland: FEI.

Hogg, D. (2002). *Costs for municipal waste management in the EU.* Bristol, UK: Eunomia Research and Consulting.

Hontelez, J. (1998). Environmental Agreements in the European Union: some views of the environmental movement. *Industry and Environment, 21(1-2),* 14-15.

Karamanos, P. (2002). Corporate incentives for participation in voluntary environmental agreements. In P. ten Brink (Ed.) *Voluntary Environmental Agreements* (50-63). UK: Greenleaf.

Lehmann, M. A. (2004). Voluntary Environmental Agreements and Competition Policy: The Case of the German System for Packaging Waste Management. *Environmental and Resource Economics*, 28, 435-449.

Lindhqvist, T. (2000). *Extended Producer Responsibility in Cleaner Production: Policy Principle to Promote Environmental Improvements of Product Systems.* IIIEE Dissertations 2000:2. Lund, Sweden: IIIEE, Lund University.

Mascarenhas, M. (2002). Legitimacy, efficacy and efficiency. In P. ten Brink (Ed.), *Voluntary Environmental Agreements* (81-94). UK: Greenleaf.

Neumayer, E. (2000). German Packaging Waste Management: A Successful Voluntary Agreement with Less Successful Environmental Effects. *European Environment*, 10, 152-163.

Nunan, F. (1999). Barriers to the Use of Voluntary Agreements: A Case Study of the Development of Packaging Waste Regulations in the UK. *European Environment, 9,* 238-248.

OECD (1998). *Extended Producer Responsibility: Phase 2 – Case study on the Dutch Packaging Covenant.* Paris: OECD.

OECD (1998a). *Voluntary Approaches for Environmental Protection in the European Union.* Paris: OECD.

OECD (1999). *Voluntary Approaches for Environmental Policy: An Assessment.* Paris: OECD.

OECD (2001). *Environmentally Related Taxes in OECD Countries – issues and strategies.* Paris: OECD.

OECD (2001a). *Extended Producer Responsibility – a guidance manual for governments.* Paris: OECD.

OECD (2003). *Voluntary Approaches for Environmental Policy: Effectiveness, Efficiency and Usage in Policy Mixes.* Paris: OECD.

Packaging Commission (2005). *Annual Report 2004.* Utrecht, the Netherlands: Packaging Commission.

Packaging Committee (2001). *Annual Report 2000.* Utrecht, the Netherlands: Packaging Committee.

Paton, B. (2002). Voluntary environmental initiatives and sustainable industry. In P. ten Brink (Ed.), *Voluntary Environmental Agreements* (30-36). UK: Greenleaf.

Perchards (2005). *Study on the progress of the implementation and impact of Directive 94/62/EC on the functioning of the internal market: Final report.* St Albans, UK: Perchards.

Porter, M. E. and Van der Linde, C. (1995). Green and Competitive: Ending the Stalemate. *Harvard Business Review, Sep.-Oct.,* 120-134.

RDC-Environment and Pira International (2003). Evaluation of costs and benefits for the achievement of reuse and recycling targets for the different packaging materials in the frame of the packaging and packaging waste directive 94/62/EC – Final Consolidated Report. [Online]. Available: http://www.rdcenvironment.be/download/Consolidated_Final_report.zip [12 August 2006].

Rense Milieu Advies (2005). De kosten van gemeenten voor verpakkingsavfal en oud papier in 2004 en 2006. [Online]. Available: http://www.nvrd.nl [26 August 2006].

Samerkhanova, A., Paulavets, K., Jachnik, R. and Toovey, N. (2006). *SED Project: Industrial Waste Management in the Municipality of Zabrze.* [Unpublished].

Sofres (2000). Cost-efficiency of packaging recovery systems – the case of France, Germany, the Netherlands and the United Kingdom. [Online]. Available: http://www.environmental-expert.com/articles/article767/study00cost-eff_sofres_mp-ol-etd98502038.pdf [12 August 2006].

The Economist (2002). Model makers. [Online]. Available: http://www.economist.com/surveys/displaystory.cfm?story_id=1098153 [16 June 2006].

TNS NIPO (2005). Zwerfafval anno 2005: Een onderzoek onder afval- en reinigingsmanagers in Nederland. [Online]. Available: http://www.recyclingnetwerk.org/e-index.html [3 September 2006].

Van Beek, R. (2006, 5 July) Personal interview.

Van Duin, R. (2006, September 1) Telephone interview.

VROM (2001). General policy on waste: waste in the Netherlands factsheet. [Online]. Available: http://www2.vrom.nl/docs/internationaal/05Landfill.pdf [3 July 2006].

VROM (2001a). Landfill: waste in the Netherlands factsheet. [Online]. Available: http://www2.vrom.nl/docs/internationaal/05Landfill.pdf [3 July 2006].

VROM (2001b). Producer responsibility: waste in the Netherlands factsheet. [Online]. Available: http://www.sharedspaces.nl/Docs/internationaal/06procer%20responsib.pdf [3 July 2006].

VROM (2005). Van Geel: No discussion on bottle deposits before the end of 2005. [Online]. Available: http://www.sharedspaces.nl/pagina.html?id=9116 [11 July 2006].

VROM Council (1998). Managing policy for a sustainable society (English summary). [Online]. Available: www.vromraad.nl/download/a006e.doc [6 September 2006].

VROM Inspectorate (2003). Annual Report 2003: Enforcement Works. [Online]. Available: www.sharedspaces.nl/pagina.html?id=7593 [12 July 2006].

White, S., Cordell, D., Lansbury, N. and Nheu, N. (2004). *Review of the National Packaging Covenant, Ver. 1.4*. Sydney: Institute for Sustainable Futures.

Yin, R. K. (2003). *Applications of case study research, Second Edition*. Thousand Oaks, USA: SAGE Publications.

Legislation and policy documents (by jurisdiction and in historical order)

European Community

Council Directive 94/62/EC of 15 December 1994 on packaging and packaging waste.

Commission Decision 1999/823/EC of 22 November 1999 confirming the measures notified by the Netherlands pursuant to Article 6(6) of Directive 94/62/EC on packaging and packaging waste.

Council Directive 2004/12/EC of 11 February 2004 amending Directive 94/62/EC on packaging and packaging waste.

The Netherlands

Packaging and Packaging Waste Regulation, July 1997.

Third Packaging Covenant as agreed and signed in The Hague on 4 December 2002.

Packagings, Paper and Card (Management) Decree of 24 March 2005.

Decree laying down regulations pursuant to the time of the partial taking of effect of Packagings, Paper and Card (Management) Decree of 10 June 2005.

Germany

The Packaging Ordinance (Verpack V).

Appendix – Community level laws

Legislation formulated at the European Union (EU) level is the highest stratum of law that directly influences waste management in the Netherlands. As a Member State within the EU, the Netherlands is required to implement the Directives delivered by the European Parliament and European Council. Such Directives give some degree of flexibility regarding the means applied for implementation, owing to the differences in domestic governing structures, legal systems and socio-economic contexts. Directive 94/62/EC ('the Directive'), which entered into force on 20 December 1994, is the paramount legal basis for the management of packaging waste in the EU. In this section, the main elements of the Directive that are of interest to this project are described.

Directive 94/62/EC and Amendments

The Directive centres on harmonising domestic legislation on packaging and packaging waste within the Member States of the EU, such that environmental harms are minimised while the normal functioning of the internal market is retained. The main strategy rests upon the prevention of packaging waste generated, while secondary principles include packaging reuse, material-recycling and energy recovery (Article 1). Incineration without using the energy from combustion, and landfill disposal are to be avoided. The pertinent features of the Directive are described below.

Requirements placed on packaging

According to the Directive, Member States must perform a range of measures to prevent or reduce the adverse impacts arising from the use of packaging waste. In particular, Member States must provide that the following minimum requirements for the composition and nature of packaging are maintained (derived from Annex II):

- packaging should be manufactured so that the volume and weight of the packaging is minimised, so long as the safety, hygiene and consumer acceptance of the product is retained;

- packaging should be designed, produced and commercialised so that recovery is permitted, and so that it has the least possible impact on the environment when disposed of;

- packaging should be manufactured to emit the lowest levels of toxic and hazardous substances possible, and to have the lowest possible emissions of these substances during waste management and disposal;

- reusable packaging should have the necessary characteristics to perform a number of cycles of reuse, and when the packaging is no longer reused it should be recoverable;

- recoverable packaging should contain a certain percentage (set by Community standards) of material that is recyclable into manufactured marketable products; and

- further requirements, particular to the processing of packaging waste by incineration, composting, and biodegradation also apply.[63]

Recycling and recovery targets

As well as directing the Member States towards certain preventive measures, the Directive (Article 6) also places specific targets for the material recycling and recovery (which may include recycling and energy recovery) of packaging waste (see Table 3-1 in Chapter 3). These targets have been extended through Amendment 2004/12/EC so that the main types of packaging material now have considerably higher levels to meet. This Amendment also introduced higher targets for overall packaging, as the previous targets and deadlines had elapsed. Table 3-1 in Chapter 3 summarises the recycling and recovery targets as they currently stand. Member States that have the capacity to achieve higher targets than those listed in the Directive are permitted to pursue these targets in order to obtain better environmental outcomes. However, the European Commission ('the Commission') must be notified of this intent, and it must be verified that these higher targets do not distort the internal market, do not reduce other Member States' abilities to comply with the Directive, and do not function as a means of restricting trade between Member States. While the Member States are not instructed to follow specific procedures, they should at least encourage recycling and recovery so that the goals may be obtained. The Member States are also expected to promote the use of recycled packaging material in new packaging products, thereby supporting demand for recycled materials and keeping the market viable.

Further responsibilities of Member States

In order to fulfil the objectives of the Directive, Member States are to ensure that sufficient measures are taken to develop collection and recovery systems for packaging waste. In addition, the Directive mandates the Member States to apply measures so that:

- appropriate labelling to assist recovery actions are emplaced;
- the levels of certain heavy metals in packaging do not exceed the limits detailed in Article 11;
- the information systems described in Article 12 are developed and maintained;
- end users, including consumers, are made aware of their roles in reducing the harms of packaging waste, and are made aware of the packaging waste processing systems that are available; and
- the specific actions (including laws and standards) taken to implement the Directive are communicated to the Commission.

The Member States were required to implement the Directive into national legislation before 30 June 1996, and inform the Commission when this had been achieved.

[63] These requirements, also from Annex II of Directive 94/62/EC, do not have direct bearing on this thesis and so their details have been omitted.

Since the publication of the Directive, Amendment 2004/12/EC introduces some changes that are relevant to this project. The amended recycling and recovery targets have already been mentioned in this section. The Amendment also states that Member States may promote energy recovery over materials recycling where this is supported by environmental and cost-benefit reasons.[64] Finally, the Amendment also explicitly allows for the use of agreements between government bodies and economic sectors to achieve the goals of the Directive,[65] provided that certain conditions are met. These conditions are:

- agreements shall be enforceable;
- agreements shall specify objectives with the corresponding deadlines;
- agreements shall be made publicly accessible and shall be transmitted to the Commission;
- the results of the agreement shall be monitored regularly and reported to the competent authorities and to the Commission, and shall be rendered publicly available;
- the progress achieved under the agreement is examined by the competent authorities; and
- where the agreement does not deliver compliance with the Directive, Member States shall implement the appropriate alternative (legislative, regulatory, or administrative) measures.

While negotiated agreements can take a wide variety of forms in principle, the Amendment ensures that certain elements are included for packaging waste agreements. The flexibility associated with negotiated agreements may therefore be curtailed in exchange for establishing safeguards in their quality.

Significance of the community level laws for the Netherlands

The Netherlands pre-empted the EU in terms of enacting policy tools to manage packaging waste impacts. This began with the first packaging waste covenant, which was signed in June 1991. Although the desired outcomes were achieved, the Netherlands was motivated to install new measures in subsequent years. In particular, the Directive necessitated the formalisation of packaging waste legislation in the Netherlands, resulting in the Packaging and Packaging Waste Regulation, which entered into force in August 1997. This regulation retained the provision for new Covenants between industry and the authorities, which was exercised in signing the Second Packaging Covenant in December 1997 and the Third

---

[64] It is noted that the Directive avoids applying a rigid waste hierarchy. In the past, the decreasing preference of treatment options has been described as: prevention; reuse; materials recycling; energy recovery; incineration; and landfill. However, the Directive follows the argument that the relative benefits of reuse, materials recycling and energy recovery are not readily apparent. For many packaging waste scenarios, analyses (such as LCA) may be necessary to determine which treatment option delivers the greatest benefits and the least harm to the environment.

[65] The original Directive contained no statements on negotiated agreements, although the European Commission apparently proscribed Covenants in principle. In response, their use was strongly pushed in the European Parliament by the representative from the Netherlands, Ms Corbey, with the result that their endorsement was granted in the amending Directive of 2004.

Packaging Covenant in December 2002. The Directive has since been amended and the Packaging Commission has since reviewed the performance of the Covenant. The desire to further improve the Netherlands' performance in packaging waste impacts has now led the original packaging waste regulations to be repealed and replaced by the Decree on Packagings, Paper and Card Management of March 2005.