

**The art of changing  
Behaviour of target groups**

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# 1. Introduction

This paper deals with the question of how behaviour of target groups can be influenced.

In many policy fields - so also in the field of Climate policy with its ambitious Policy goals - it is necessary that people and organisations change their behaviour.

Therefore the government implements policy instruments to stimulate groups of people (and organisations (housing associations, house-owners, schools) to change their behaviour.

So covenants are being made with several industrial branches about using sustainable material. Information and subsidies are being used to stimulate owners and tenants of houses to conserve energy.

This paper describes a method<sup>1</sup> to choose the most appropriate mix of instruments, if you want to change the behaviour of a target group in a specific direction.

In section 2 two different points of departure are being discussed on influencing the behaviour of target groups, it ends with a short overview of the method, which is elaborated on in the next sections. Section 3 addresses the energy conservation behaviour and its influencing factors. Section 4 describes more in detail the different instruments and their effect.

In section 5 the instrument planner is presented. This instrument planner provides and advice on the instruments that most effectively influence the behaviour. By means of an example we demonstrate the operation of the instrumentplanner.

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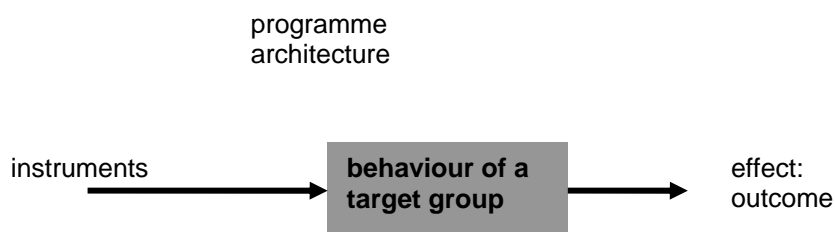
<sup>1</sup> This method is based on the PhD study of Cees Egmond, PhD. Egmond, Focus on Change, thesis, Maastricht University, 2006

## 2. Point of departure

### *Instrument-oriented approach*

We notice that many program developers and communication experts, at energy agencies, NGOs or other organisations follow an instrument-oriented approach. This approach is depicted in the figure below.

**Figure 1. Program development under the instrument-oriented approach**



With this type of program development the behaviour to be influenced by the program and its instruments are considered to be a black box. Instruments, for instance information campaigns or subsidies, are developed and applied to influence the behaviour of a target group, hopefully leading to an effect. The choice of instrument(s) is often determined by habit, or by the competencies of the program organization. In this way an instrument-oriented approach is being followed. The instruments are the focus of the program. This is often the case for energy agencies receiving an assignment, from government, to develop a general awareness campaign, or a website with information on energy-efficient options.

The advantage of this approach is that it often leads to very high quality instruments. But the big disadvantage is that you cannot explain why the instrument has caused the effect it has on the behaviour. It is also possible (and this happens often) that there is no effect on the behaviour of the target group at all, because the instrument was not the right instrument to influence this specific type of behaviour, or because it did not address the actual problems. To overcome these problems, we advocate using a change-oriented approach to develop programs or interventions.

### *A change – oriented approach*

It can be done otherwise, but then we have to open the black box of the behaviour.

Behavioural change occurs if people are motivated to perform the desired behaviour. But motivation alone is not enough: people have also to be able to perform the desired behaviour.

People are motivated by the following factors: awareness, knowledge, social influence and attitude. These factors determine the motivation and lead to an intention to perform the desired behaviour.

As said before, motivation is not enough. One has to be able to perform the desired behaviour. We call the factors that enable people to perform the

desired behaviour the enabling factors. For example financial, technical resources and new skills.

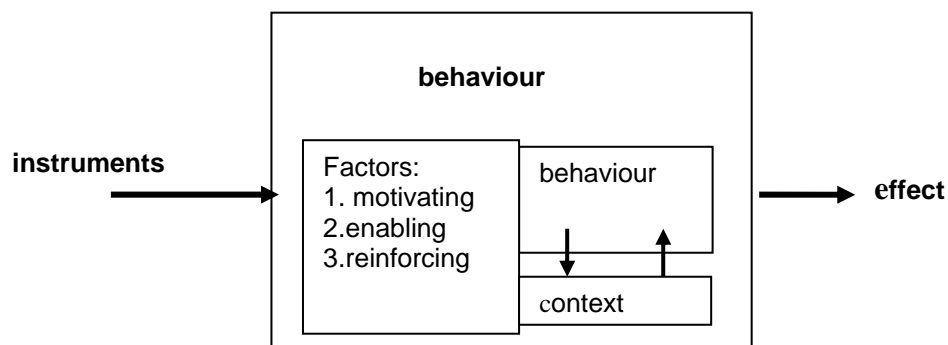
The motivating and enabling factors are important to set off the behavioural change, and to start the desired behaviour. But if we want to make the new behaviour permanent, than we have to reinforce this new behaviour.

Reinforcement occurs by influence of peers, experts and authorities.

And so behaviour is a function of the collective influence of these influencing factors, the socalled determinants.

From this we conclude that if we open the black box of behaviour we see the following figure (figure 2).

**figure 2. opening the black box**



Our assumption is that, in influencing behaviour, we do not aim at influencing the behaviour directly but we aim at the factors of the behaviour. Therefore we have to establish the factors of the specific behaviour we want to influence. But we also have to take the relevant context into consideration. Sometimes the change of context makes behavioural change unnecessary.

For example, if the government wants to promote energy efficient lamps (like CFLs), it can try to influence behaviour of end-users to buy and use those. But if the government decides to out-phase incandescent light bulbs, there is no need to influence the behaviour of end-users.

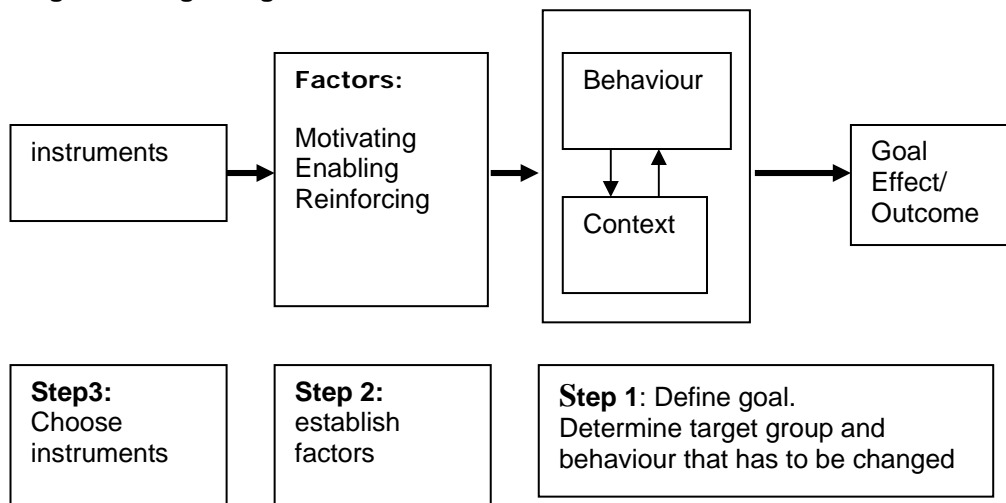
If we have established the factors of a specific behaviour, we can subsequently find the instruments that match these factors. Because we know what the effect is of the specific instruments on the factors (see Section 4). We then have a set of instruments that is theoretically most appropriate to influence factors that will influence the behaviour.

This set of instruments together form the basis of an intervention strategy. And this intervention strategy is well founded in a behavioural analysis.

The change-oriented approach logically leads to a goal-oriented planning model. This model is based on the the Procees-precuede planning and evlautaion model of Green and Kreuter<sup>1</sup>. The logic is as follows: *Start with the desired outcome and work backward to develop the intervention.*

See figure 3 "Beginning at the end".

**Figure 3: Beginning at the end**



*Beginning at the end means:*

First define the goal, and the behaviour which contributes to this goal, then establish the factors, and last but not least choose the instruments which match these factors.

### **Step 1: Goal and behaviour**

Defining the goal, and determine the target group and diagnose the relevant changes in behaviour and environment to meet this goal.

### **Step 2: Establish the behavioural factors**

Establishing the relevant factors of the behavioural and contextual change. This can be done by studying the target group and its context by means of focus groups or a survey with a questionnaire, analyzing the data and identifying the most important factors.

### **Step 3: Choosing the matching instruments**

We know the so-called 'active ingredients' of instruments — that is, their specific influence on the factors of behaviour. The active ingredients of the policy instruments should match with the factor influencing behaviour of the target group. The instrument planner provides us with such a set of instruments which match the factors we found in step 2.

After choosing the instruments all the ingredients necessary to formulate an intervention strategy are available.

In the next sections we discuss the theory about behaviour and factors and the instruments and their effect.

<sup>1</sup> Green en Kreuter (1999), Health Promotion Planning (3ed), Mayfield, Mountain View ,California.

## 3. Behaviour and Determinants

### 3.1 Introduction

In this section the behaviour of target groups is discussed. There are two main types of behaviour: habitual behaviour and reasoned behaviour. Further the factors of behaviour are elaborated on. In this way step 1 and step 2 of the planning model (figure3) are made concrete.

### 3.2 Energy related behaviour

Energy related behaviour in the first place consists of routines and repeated behaviour, i.e. switching on and off lights, washing, showering, and in the second place of small investments in energy conservation measures and the replacement purchases of appliances.

### 3.3 Determinants of energy related behaviour

As we have seen in the previous section determinants are factors which influence behaviour. Green en Kreuter <sup>1</sup>describe three main groups of determinants: motivating, enabling and reinforcing factors. Each of these group of factors has its specific influence on behaviour.

The *motivating* factors lead to the intention to perform the behaviour. The *enabling* factors make it possible to begin the desired behaviour. The *reinforcing* factors have an behaviour lasting character. The factors are now being discussed more in detail.

#### 3.3.1 Motivating factors

Motivating factors are especially internal antecedents to behaviour, belonging to the individual that motivate the behaviour. Examples are awareness and knowledge, social influence, attitude, perceived capabilities and intention. Motivating factors are found in the socio-psychological and cultural domain of organizations.

*Awareness and knowledge:* Awareness and knowledge of a situation usually form the first step in the behavioural change process. Awareness we define as being aware of the desired behaviour. Knowledge as knowing about the background of the behaviour ( why-knowledge, and knowing about how the behaviour is performed (how-knowledge).

*Social Influence:* People are sensitive the good and the bad dimensions of the outlook on a specific behaviour. This is often influenced by the norms and values of society, or set by the conviction of perceived important persons.

*Attitude:* An attitude is a form of evaluation directed toward an action or a

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<sup>1</sup> Green en Kreuter (1999), Health Promotion Planning (3ed), Mayfield, Mountain View ,California.



situation. The evaluative aspect is the core element of an attitude. Organizations express their attitudes in policy guide-lines, policy plans and action plans on certain issues.

*Perceived capability:* Perceived capability is an organization's or individual's perception of its own capacity implementing a new behaviour.

### **3.3.2 Enabling factors**

Enabling factors are the external antecedents to behaviour, belonging to the context. They allow new behaviour to be realized. Enabling factors are conditions of the context and facilitate the performance or action of organizations. Enabling factors relate to resources, and new skills. Resources include external financial, technical and organizational and judicial resources. Examples are subsidies, engineering advises, and specific advisors. New skills may have to be acquired to realize the desired behaviour.

### **3.3.3 Reinforcing factors**

Reinforcing factors are those consequences of an action which determine whether the individual receives feedback. Reinforcing factors determine whether one receives positive or negative feedback and support afterwards. They include: feedback of peers, advice and feedback by powerful and significant actors: experts and authorities (offering stimulating subsidies and enforcing obligations). The feedback can be given in several ways: through social benefits, recognition, status, positioning towards peers, advises and financial rewards.

In het next section we discuss how these factors can be influenced with instruments.

## 4. Instruments and their effect on factors

### 4.1 Introduction

In this section we continue with the third step from the planning model of section 2 (figure 3 step 3): choosing instruments. First we discuss the four main types of instruments. Then we discuss more profound the effect of instruments on the factors: the so-called active ingredients of instruments. We describe these in the form of a table: the instrument table. This 'instrument table' forms the heart of the digital instrument planner attached to this brochure (see section 5).

### 4.2 Types of instruments

There are four main types of instruments:

- (1) Judicial;
- (2) Economic;
- (3) Communicative instruments; and
- (4) Structural provisions. The details of the instruments related are described below.

*1. Judicial instruments* prescribe behaviour and set a norm. Legislation expresses a public value or a social interest, and therefore it imposes itself on the individual and the organization as a norm. This causes the normative character of legislation. Following subcategories can be distinguished: Law and legislation, specific regulation and covenants.

*2. Economic instruments* are usually directed at influencing financial considerations in such a way that one will behave in an environmentally favourable way. It provides (1) advantages in the form of subsidies, (2) disadvantages in the form of levies, and (3) it makes environmental topics part of the economic traffic by giving environmental issues an economical value. The financing problem can be facilitated by supplying financial construction

*3. Communicative instrument* transfer knowledge or provide examples for the purpose of persuasion, convincing or tempting. These instruments can also be used in combination with and to support other types of instruments. Creating social support and realizing disclosure are then the targets. Examples are stimulating communication and promotion documents, labels, demonstrations and benchmarks. The effect of a communicative instrument is larger if the message is tailored.

*4. Physical provisions* are clearly influencing behaviour. On an individual level we call this last type of influencing behaviour: technical steering of behaviour. Structural provisions can have a compulsory character. On the level of a residential area we know the sun-oriented design and building of houses, and the provision of an energy infrastructure. On an individual level there are for example the roundabout and the speed ramp. Also many devices, such as thermostats and time switches exemplify structural provisions. Physical provisions have also an enabling character: the cruise-control and bottle banks.

### 4.3 Effect of instruments on determinants

Based on the above considerations, we analyzed the various instruments in terms of their influence on the motivating, enabling and reinforcing factors. We present this in the form of an instrument table (Table 1), where the grey cells indicate the effect of a specific instrument.

*Judicial instruments* have their effect mainly on the organizational norm, and attitude. Furthermore, judicial instruments affect the factor feedback of the authorities. Covenants and agreements have a broader impact, and affect awareness, subjective norm and feedback of peer organizations.

*Economical instruments* have little effect on awareness, but mainly affect the enabling factor financial resources. They also affect attitude because economical instruments positively influence decisions about investments.

*Communicative instruments* have the broadest impact: they have effect on awareness, knowledge, attitude and self-efficacy, but not a big effect on organizational norm and subjective norm. Furthermore the communicative instruments have effect on a number of enabling factors: technical and organizational resources, and new skills. Benchmark and demonstration have clearly a reinforcing effect.

*Structural provisions* have due to their compulsory and facilitating character have influence on awareness, attitude, self-efficacy, and technical and organization.

**Table 1. Instrumententable: effect of instruments on the determinants**

	Determinants											
	Motivating					Enabling				Reinforcing		
	Awareness	Knowledge	Sociale influence	Attitude	Self efficacy	Financial resources	Technical resources	Organisational resources	New skills	Influence of peers	Influence of experts	Influence of authorities
<b>Instruments:</b>												
1.1 Law and Regulation	1		2	1								1
1.2 Specific permits	1		2	1								1
1.3 Covenants and agreements	1		1	1						2		1
2.1 Subsidy/rewards	1			1		2						1
2.2 Levy/ fine	1			1		2						1
2.3 Financing constructions				1		2		1			1	
2.4 Financial guarantee				1	1	2					1	1
2.5 Tax measures	1		1	1		2						1
3.1 Knowledge transfer	1	2		1	1	1	1					
3.2 Modelling	1		1	1	1					2		
3.3 Stimulating communication	1			2	1						1	1
3.4 Training		1			2		1		1		1	
3.5 Coaching		1	1	1	2			1			1	
3.6 Personal advice		1		2	1			1	1		1	
3.7 Networking	1		1	2	1			1			1	
3.8 Labels	1		1	2							1	1
3.9 Demonstrations	1	1		1	1					2	1	
3.10 Benchmarks	1									2	1	
3.11 Feedback	1		1	2	1		1			1	1	
4.1 Infrastructural provisions	1			1	1		2	1				1
4.2 Technical steering of behaviour	1			1	1		2	1				

The instrument table (table 1) reports the active ingredients in detail. The greys cells in the table present which instruments have an effect on the factors. The numbers 1 and 2 in the cells indicate an effect: (1) is a normal effect, (2) is a main effect.

This information on the effect of the instruments provides the opportunity to choose our instruments in the most optimal way, as will be explained in section 5 of the instrument planner.

## 5. The instrument planner

### 5.1 Introduction

We have the knowledge about the effect of instruments, the actors: the Instrument table (Table 1). If we know which factors have influence on the behaviour, then we know how theoretically we can influence the behaviour in the best way.

### 5.2 Example

We follow the example of the energy conservation behaviour of the target group households to show how the instrument planner operates. First we want to know what factors influence the energy conservation behaviour of households and how big this influence is. The rate of influence we call the relative importance of the determinant. This relative weight is the outcome of a literature review and focus group research we conducted among the target group households. Table 2 shows the determinants and their relative importance: the higher the score, the larger the influence is of the determinant on the behaviour. The score is of 0 to 3 (of no importance to big importance).

**Table 2: Determinanttable: relative importance of the determinants**

Categories	Factors	importance determinants
Motivating factors	Awareness	1
	Knowledge	0
	Social Influence	2
	Attitude	3
	Perceived Capability	3
Enabling factors	Financial resources	0
	Technical resources	0
	Organisational resources	0
	New skills	1
Reinforcing factors	Feed back of peers	3
	Feedback of experts	0
	Feedback of authorities	1
<b>The higher the score the more important is the factor: score is of 0 to 3 (of no importance to big importance)</b>		

The column 'importance' from table 2 expresses how large the influence is of a factor on the energy conservation behaviour of a household. Table 1 of the previous section (the instrument table) shows the influence of the various instruments on the factors. Combined these two tables provide a picture of the influence which instruments have on the behaviour.

The combinationmatrix (table 3) combines the information from table 1 with table 2. First, we took the values of the relative importance of the factors from table 1 and put them in the row labelled 'importance of factors'. Subsequently, we inserted these values in the grey cells of the table. In other words, each value shown in the main body of the table in Figure 5 is the *relative importance*

of the factor. By adding the row values corresponding to an instrument, we get a score in the column labelled 'importance of instrument' indicating the relative importance of the instrument in changing the energy conservation behaviour of Dutch households. The higher the score the more appropriate is the instrument.

**Table 3 Combination matrix: combination of the Factor table (table 2) and the Instrument table (table 1)**

	Importance of instruments	Determinants											
		Motivating					Enabling				Reinforcing		
		Awareness	Knowledge	Social influence	Attitude	Self efficacy	Financial resources	Technical resources	Organisational resources	New skills	Influence of peers	Influence of experts	Influence of authorities
<b>Importance of determinants (from table 2)</b>		<b>1</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>1</b>
1.1 Law and Regulation	9	1		4	3								1
1.2 Specific permits	9	1		4	3								1
1.3 Covenants and agreements	13	1		2	3					6			1
2.1 Subsidy	5	1			3		0						1
2.2 Levy	5	1			3		0						1
2.3 Financing constructions	6				3	3	0		0			0	
2.4 Financial guarantee	7				3	3	0		0			0	1
2.5 Tax measures	7	1		2	3		0						1
3.1 Knowledge transfer	7	1	0		3	3	0	0					
3.2 Modelling	15	1		2	3	3					6		
3.3 Stimulating communication	11	1			6	3						0	1
3.4 Training	7		0			6		0		1		0	
3.5 Coaching	11		0	2	3	6			0			0	
3.6 Personal advice	10		0		6	3			0	1		0	
3.7 Networking	12	1		2	6	3			0			0	
3.8 Labels	10	1		2	6							0	1
3.9 Demonstrations	13	1	0		3	3					6	0	
3.10 Benchmarks	7	1									6	0	
3.11 Feedback	15	1		2	6	3		0			3	0	
4.1 Infrastructural provisions	8	1			3	3		0	0				1
4.2 Technical steering of behaviour	7	1			3	3		0	0				

From table 3 we can read the instruments in order of importance: The instrument planner provided the following instruments (table 3): Modelling (15), feedback (15), demonstration (13), agreements (13), networking (12) en with 11 and 10 points coaching, stimulating communication and personal advice.

### 5.3 Digital instrument planner

*How it operates*

In the previous section is explained how the instrument planner operates by means of an example. In this example we have used the result of a study which was performed on a target group. Unfortunately you do not, as a program developer or policy maker, always have the time and the resources to do research on your target group. Therefore this brochure is accompanied by a digital instrument planner.

This planner guides you in a simple way through some questions about your target group's behaviour and behavioural factors. Answering the 12 questions about the target group and the desired behaviour, makes an assessment about the importance of the determinants. The instrument planner provides an advice about the most appropriate instruments, that theoretically influence the behaviour. So all ingredients are there to develop an effective intervention strategy.

#### *Using the instrument planner*

The instrument planner is used at its best in the developmental phase of a program. In a focus group of members of the target group the desired behaviour could be assessed and by answering the questions on the factors the instrument planner provides a first provisional set of most appropriate instruments.

But if the answers on the questions are ambiguous, then a more profound method of research is needed to acquire more and better insight in the actual importance of a factor.