How to change behaviour and actions of NCGG target groups

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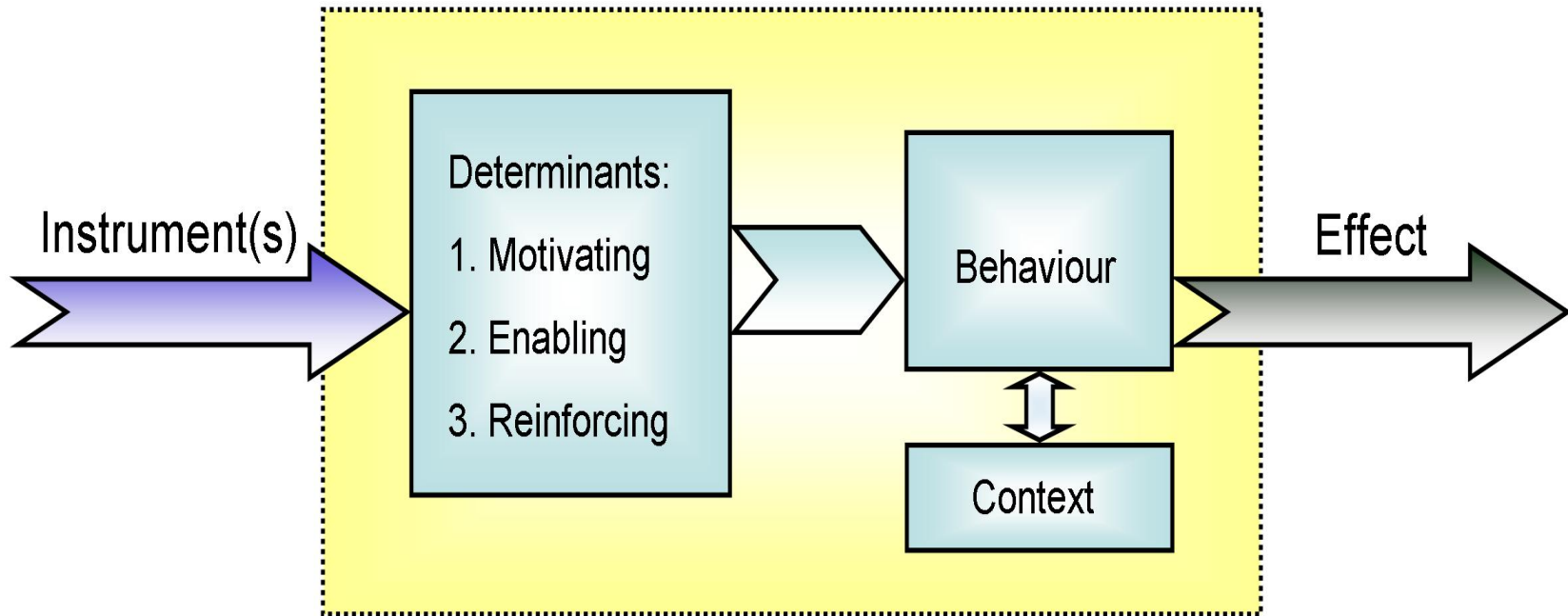
Policy instruments and tools

Point of departure

- The succes of instruments is related to the effect of instruments
- The success of instruments depends on what you want to achieve:
  - If you want to hang a painting to the wall: use a hammer, not a saw!
  - If it doesn't work with a saw, don't blame the saw!
- SenterNovem ROB-programme tries to influence NCGG reduction behaviour and related actions with policy instruments
- Success in changing behaviour of NCGG target groups requires the right choice of policy instruments
- A successful policy instrument in itself does not exist

So, the success of policy instruments has everything to do with choosing the right instruments for the required function

Overview

1. How to induce behavioural change

2. Available types of policy instruments

3. Choosing the best mix of policy instruments

4. Explaining the method of the *Instrument Planner*

5. Dutch NCGG-reduction and Chinese energy saving example of successful use of *Instrument Planner*

6. Conclusions and recommendations

1a. The opened black box of behaviour

1b. Influencing process

- Behavioural change occurs and persists if all three conditions are aligned

- Motivators and Enablers start the behaviour
- Reinforcers persist the behaviour

- With policy instruments we affect these three factors or behavioural determinants
- So we need to find out which of these instruments are suitable tools for our NCGG-reduction ambition

2a. Instruments influence behaviour

1. **Legal instruments:**
   - **Law and regulation**
   - **Permits**
   - **Agreements**
2. **Economic instruments:**
   - **Subsidy**
   - **Levy**
   - **Financial Constructions**
3. **Communicative instruments:**
   - **Knowledge Transfer**
   - **Feedback**
   - **Advise**
   - **Labels**
   - **Benchmark**
4. **Physical Provisions:**
   - **Infrastructural provisions**
   - **Technical Steering of behaviour**

2b. Effect of policy instruments on behavioural determinants

The Instrument Table

Instrument table													

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Instruments											
1.1 Laws and Regulations											
1.2 Specific Permits											
1.3 Covenants and Agreements											
2.1 Subsidies											
2.2 Levies											
2.3 Financing Constructions											
3.1 Knowledge Transfer											
3.2 Modelling											
3.3 Stimulating Communication											
3.4 Training											
3.5 Coaching											
3.6 Personal Advise											
3.7 Labels											
3.8 Demonstrations											
3.9 Benchmarks											
3.10 Feedback											
4.1 Infrastructural Provisions											
4.2 Technical Steering of Behaviour											

Instrument table	Factors											
	Motivating					Enabling				Reinforcing		
Instruments	Awareness	Knowwledge	Social norms	Attitude	Perceived Capability	Financial Resources	Technical Resources	Organisational Resources	New Skills	Influence of Peers	Influence of Experts	Influence of Authoritiies
1.1 Laws and Regulations	■		■	■								■
1.2 Specific Permits	■		■									■
1.3 Covenants and Agreements	■		■							■		■
2.1 Subsidies	■			■		■						■
2.2 Levies	■			■		■						■
2.3 Financing Constructions				■				■			■	
3.1 Knowledge Transfer	■	■				■	■					
3.2 Modelling			■							■		
3.3 Stimulating Communication	■										■	■
3.4 Training		■			■		■	■	■		■	
3.5 Coaching		■						■				
3.6 Personal Advise	■			■			■	■				
3.7 Labels	■		■								■	■
3.8 Demonstrations	■	■		■			■		■			
3.9 Benchmarks	■									■	■	
3.10 Feedback	■			■	■	■					■	
4.1 Infrastructural Provisions	■			■	■		■	■				■
4.2 Technical Steering of Behaviour	■			■	■			■				

INSTRUMENTS:	Behavioural determinants of the SenterNovem 'instrument planner'											
	MOTIVATING					ENABLING				REINFORCING		
	A w a r	K n o w	S o c i	A t t i	S e f f	N f f R	N f t R	N f o R	N E W S	P e e r	E x p e	A u t h
1.1 General laws and regulations	1		2	1								1
1.2 Specific permits	1		2	1								1
1.3 Agreements and covenants	1		1	1						2		1
2.1 Subsidies	1			1		2						1
2.2 Levies	1			1		2						1
2.3 Financing constructions				1	2	1		1			1	
3.1 Knowledge transfer	1	2		1	1	1	1					
3.2 Modelling			1	1	1					2		
3.3 Stimulating communication	1		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		2		1	1		1	1	1		1	
3.7 Labels	1		1	2							1	1
3.8 Demonstrations	1	1		1	1		1		1	2	1	
3.9 Benchmarks	1									2	1	
3.10 Feedback	1			1	2		1			2	1	
4.1 Infrastructural provisions	1			1	1			2	1			1
4.2 Technical steering of behaviour	1			1	1			2	1			

3a. Choosing instruments: matching instruments and factors

Instruments:
Legal
Economic
Communicative
Physical
  provisions

Influencing Factors:

1. Motivating:
Awareness, Knowledge,
Social Norm, Attitude,
Perceived Capability

2. Enabling:
Resources
Financial, Technical,
Organisational,
New Skills

3. Reinforcing:
Influence of Peers, of
Experts and Authorities

Behaviour

Context

Effect

SenterNovem

NCGG5
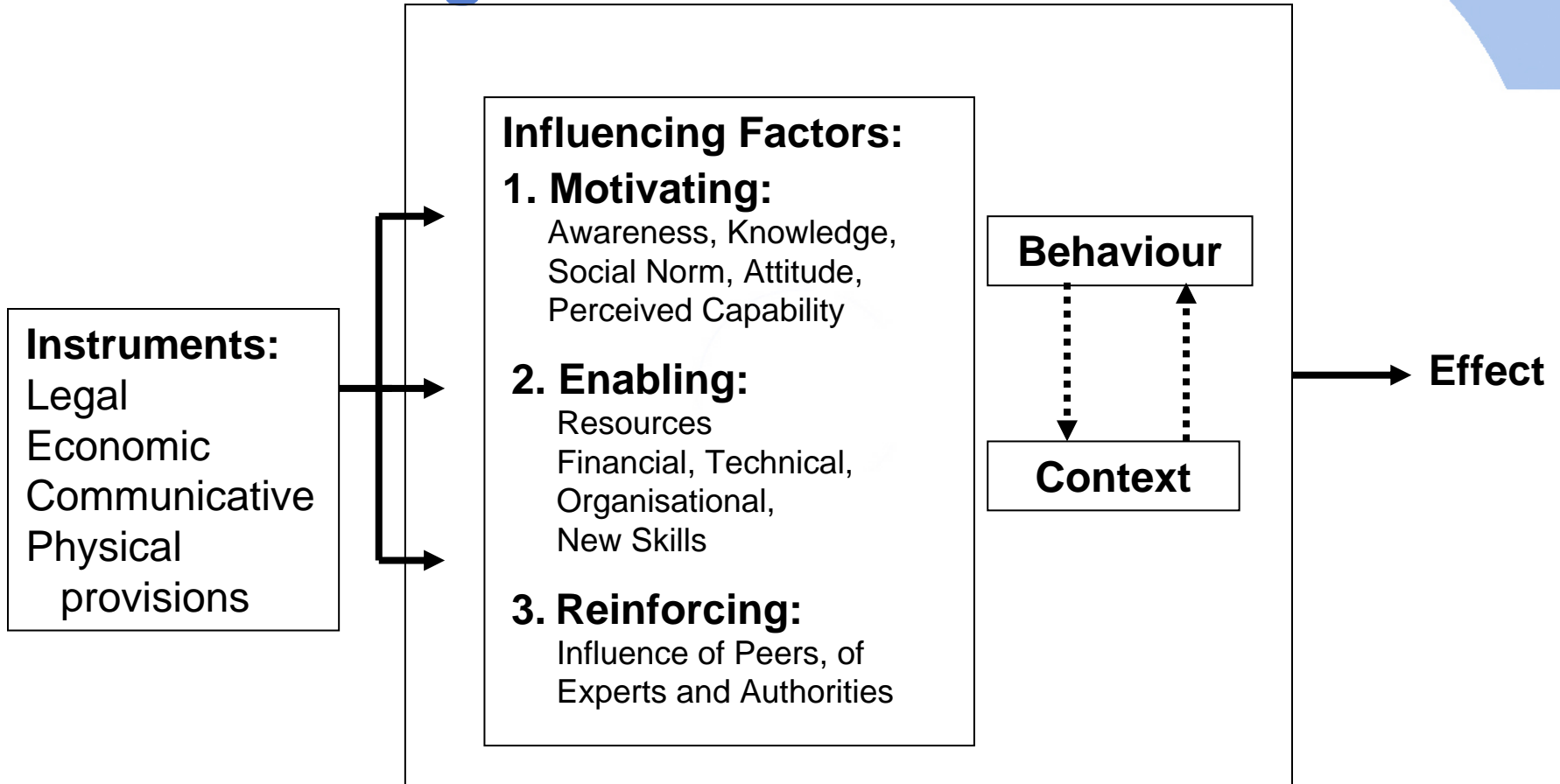
3b. Choosing instruments

Ingredients:

1. We know the effect of policy instruments on the factors from the instrument-table,

2. If we know the relative importance of the factors of a specific behaviour,
   we can:

3. Match the instruments to these set of factors,

4. Result: the most appropriate set of policy instruments.

3c. The choice of instruments in three steps, starting at the desired goal and working backwards

Instrument(s) → Determinants: 1. Motivating 2. Enabling 3. Reinforcing → Behaviour ↕ Context → Goal / outcome
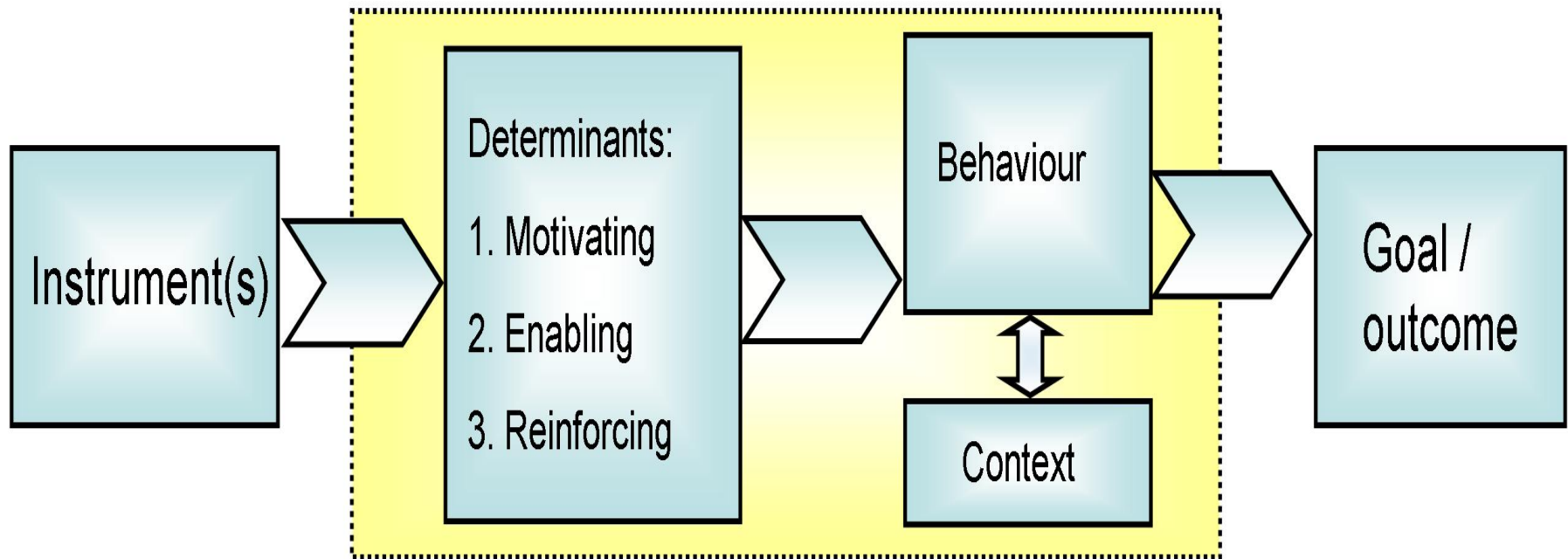
Step 3: choose instrument(s)

Step 2: establish the relevant determinants

Step 1: define goal, determine target group and behaviour that has to be changed

4. Instrument Planner explained

Factors of NCGG-reduction related behaviour
of NXP semiconductors

	Influencing Factors	Relative importance
Motivating	Awareness	0
	Knowledge	1
	Social norms and values	2
	Attitude	**3**
	Perceived Capabilities	**2**
Enabling	Financial Resources	3
	Technical Resources	**1**
	Organisational Resources	**1**
	New Skills	2
Reinforcing	Feedback of Peers	2
	Feedback and Advise of Experts	**2**
	Influence of Authorities	2

| NXP Semiconductor industry | Rel. instr. score | MOTIVATING | | | | | ENABLING | | | | REINFORCING | | |
NCGG reduction investment		Awar	Know	Soci	Atti	Seff	NfFR	NfTR	NfOR	NewS	Peer	Expe	Auth
Relative weight of determinant		0	1	2	3	2	3	1	1	2	2	2	2
1.1 General laws and regulations	9	0		4	3								2
1.2 Specific permits	9	0		4	3								2
1.3 Agreements and covenants	11	0		2	3						4		2
2.1 Subsidies	11	0			3		6						2
2.2 Levies	11	0			3		6						2
2.3 Financing constructions	13				3	4	3		1			2	

NXP Semiconductor industry		MOTIVATING					ENABLING				REINFORCING		
NCGG reduction investment	Rel. instr. score	Awar	Know	Soci	Atti	Seff	NfFR	NfTR	NfOR	NewS	Peer	Expe	Auth
Relative weight of determinant		0	1	2	3	2	3	1	1	2	2	2	2
3.1 Knowledge transfer	11	0	2		3	2	3	1					
3.2 Modelling	11			2	3	2					4		
3.3 Stimulating communication	12	0			6	2						2	2
3.4 Training	10		1			4		1		2		2	
3.5 Coaching	13		1	2	3	4			1			2	
3.6 Personal advice	12		2		3	2			1	2		2	
3.7 Labels	12	0		2	6							2	2
3.8 Demonstrations	15	0	1		3	2		1		2	4	2	
3.9 Benchmarks	6	0									4	2	
3.10 Feedback	14	0			3	4		1			4	2	
4.1 Infrastructural provisions	10	0			3	2		2	1				2
4.2 Technical behaviour steering	8	0			3	2		2	1				

5. Highest instrument scores from Instrument Planner combination matrix – proven to be successful mix

Dutch NCGG-reduction example NXP Semiconductors:

- demonstrations (15)
- feedback (14)
- financing constructions (13)
- coaching (13)

Chinese LTA energy-efficiency example:

- demonstrations (21)
- personal advice (17)
- feedback (17)

Dutch NCGG-reduction for dairy farming: advice on instruments in progress

6a. Conclusions and recommendations

- The SenterNovem 'instrument planner' is specifically suitable for use in the development phase of an intervention programme focusing on reducing NCGG

- It provides the government with an effective means to determine the best policy instruments to be used for influencing the behaviour of target groups towards realizing substantial NCGG reductions

- The use of this tool in the Netherlands and China has demonstrated its usefulness in advising on the optimal instrument mix for achieving sustainable impact

- The results also correspond well with SenterNovem's practical experiences in the area of facilitating public-private partnerships applying a mix of incentives and credible threat of sanctions

6b. Conclusions and recommendations

- The recommended instrument mix forms the basis for an intervention strategy that does not depend on the habits and competences within a governmental organization.
- This tool can be used to prevent the recurrent use of the wrong tool for the job in question.

- The broader use of the 'instrument planner' will contribute to realizing substantial NCGG reductions in many other countries as well as in the Netherlands.
- This replication will provide a double dividend, as the global behavioural change achieved, and the related actions, will further accelerate the technological and market innovations required for achieving ambitious NCGG reduction targets.