



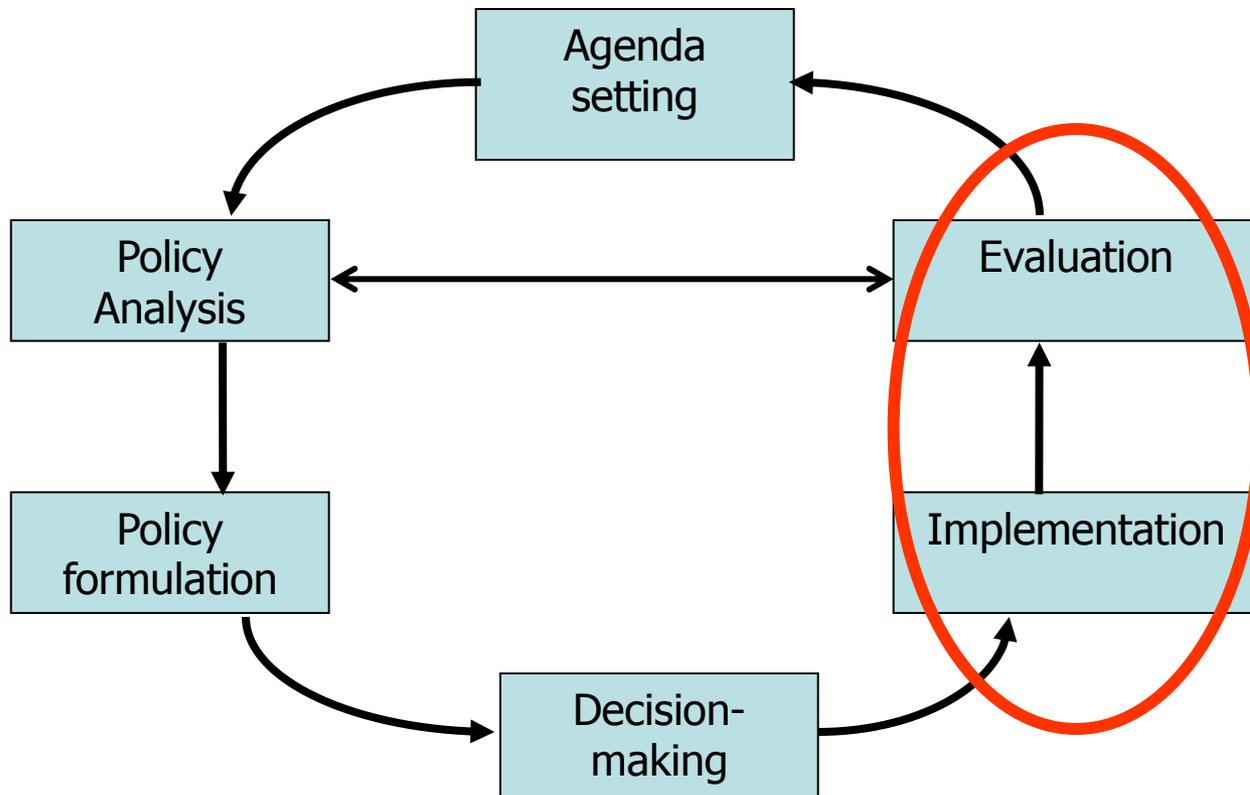
# Environmental Policy: inspection, enforcement, monitoring and evaluation

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# My Contribution

- This morning
  - Inspection: compliance and enforcement
- This afternoon
  - Film on enforcement
    - OR
  - Inspection and enforcement of diffuse sources
  - Risk assessment tool enforcement
- Wednesday morning
  - The Monitoring Cycle
- Thursday
  - Field trip to Rijkswaterstaat Lelystad (I won't come with you)
- Friday
  - Field trip to Waterboard Hollandse Delta (I will accompany you)

# Environmental Policy: Implementation and evaluation



- Selecting policy instruments
- Appointing responsible agencies
- Monitoring compliance
- Enforcement
- Evaluation

# Market-based/economic instruments



- use market forces to achieve desired behaviour changes
- Include taxes, subsidies, tradable permits, etc
- can be used independently of or supplement to regulatory instruments

# Voluntary mechanisms



- public education (training, capacity building programs)
- technical assistance
- the promotion of environmental leadership by industry and nongovernmental organizations (Code of environmental responsibility, EMS etc.)



# Environmental management systems

- Companies write and adopt an environmental policy
- An accredited third party verifies all these things and issues a certificate



- Standards of EMS:
  - **BSS7750** - developed by British Standards Institution in 1992
  - **EMAS** - launched by EU Council Regulation 1836/93 in 1993
  - **ISO14000** - introduced by the International Standards Organization (ISO) in 1996

# Regulatory instruments



- The government prescribes the desired changes through detailed requirements (laws, regulations)
- The government promotes and enforces compliance with these requirements

# Legislation

- Laws
  - Vision, scope and authority; general requirements
- Regulations
  - Provide more details to general requirements
  - Specify “how things must be done”
  - Set up criteria and procedures for permits/licenses
- Permits, licenses

Detailing requirements



# Compliance

- **Compliance** is the full implementation of established requirements
- **Compliance** occurs when requirements are met and desired **changes** are achieved:
  - work practices are changed
  - hazardous waste is disposed at approved sites
  - ...

# Enforcement

- **Enforcement:** set of actions aimed at achieving compliance
- **Becker's theory of "rational crime":**
  - every firm wants to increase its profit and will comply with a law only if it is beneficial to it

# Deterrence and Enforcement

- **Deterrence:** phenomenon of avoidance of a sanction imposed for violation
- Two-fold effect of enforcement :
  - It deters detected violators from breaking rules again
  - It deters other potential violators by sending them a message that they may experience adverse consequences for non-compliance as well

# Enforcement actions

- Enforcement involves:
  - **Compliance promotion** (educational programs, technical assistance)
  - **Compliance monitoring** (inspections)
  - **Legal actions** against a violator (sanctions)

# Compliance promotion



- Educational programs, technical assistance
- Economic incentives (pollution tax, subsidies)
- Publishing success stories
- Building public support (NGOs, public education program)

Based on INECE/OECD, 2003

# Compliance monitoring



- is a system of continued observations, measurements, evaluation and reporting
- is needed to show compliance with requirements

# Who monitors?



Operator (self-monitoring)



Authority (inspections)

# Where and when to monitor



- Sampling location
  - Source, pathways, recipient
- Timing and duration
  - Sampling time, frequency resolution

# How to monitor and report?



- Quality assurance
  - Methods (for sampling and analysis) available, detection limits, certification, accreditation
- Reporting requirements
  - Timing, content

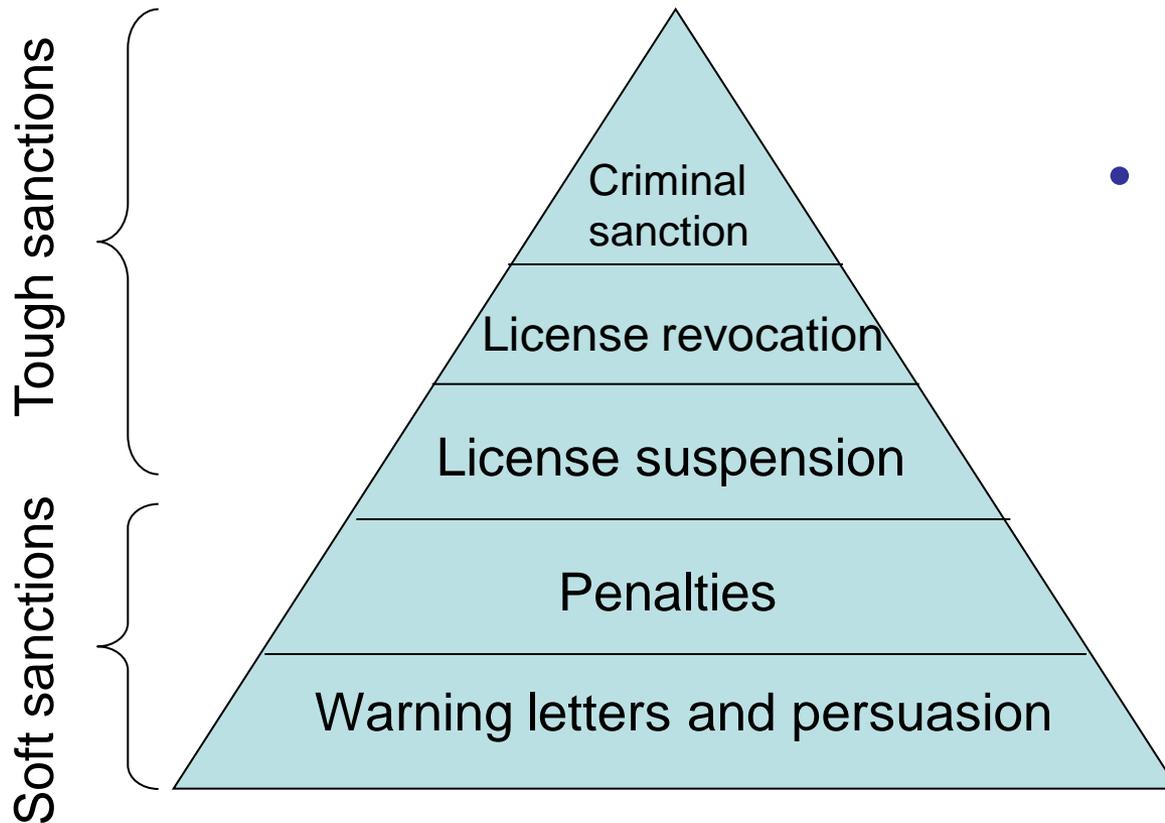
# Legal action



- to compel compliance
- to impose some consequence for violating the law or posing a threat to public health or environmental quality

Based on INECE/OECD, 2003

# Enforcement (sanction) pyramid



- **Sanction**: any adverse consequence imposed on a violator



# Compliance analysis with “Table of 11”



# Why, do you think, people (companies) comply with rules?

- Please, think about at least three reasons motivating YOU to comply with a rule

# Why do people comply with laws?

- Motivations (as identified through behavioral studies):
  - **Economic**: people gain more benefits from compliance than from violation
  - **Social/moral**: people respect “rule of the law”, government, value the environment etc
  - **Personal**: influence of others’ behaviour, fear
  - **Deterrence**: effect of enforcement

# Table of Eleven

- Tool for systematic analysis of compliance level and enforcement effectiveness
- Developed for the Netherlands' Ministry of Justice on the basis of behavior studies
- Gives an insight into reasons driving environmental performance
- Helps to map strong and weak points of a program/policy design and implementation

# Table of 11: 11 dimensions (1)

<b>Spontaneous compliance dimensions</b>	<b>Explanation</b>
<b>T1 Knowledge of rules</b>	Target group familiarity with laws and regulation, clarity (quality) of laws and regulations
<b>T2 Cost/benefits of compliance/non-compliance</b>	Material and non-material advantages and disadvantages resulting from violating a regulation
<b>T3 Extent of policy acceptance</b>	The extent to which the target group (generally) accepts policy, laws, and regulations
<b>T4 Target group's respect for authority</b>	Innate willingness or habit of target group to comply with laws
<b>T5 Non-governmental control</b>	Possibility that non-compliant behaviour of the target group will be detected and disapproved of by third parties

# Table of 11: 11 dimensions (2)

<b>Enforcement dimensions (control)</b>	<b>Explanation</b>
<b>T6 Risk of being reported</b>	The possibility that an offence may be detected by third parties and may be officially reported
<b>T7 Risk of inspection</b>	Likelihood of being subject to an administrative (paper) or substantive (physical) audit/inspection by official authorities
<b>T8 Risk of detection</b>	Possibility of the detection of an offence during an administrative audit or substantive investigation by official authorities
<b>T9 Selectivity in inspection</b>	The (increased) chance of control and detection as a result of risk analysis and targeting firms, persons or areas

# Table of 11: 11 dimensions (3)

<b>Enforcement dimensions (sanction)</b>	<b>Explanation</b>
<b>T10 Risk of sanctions</b>	Possibility of a sanction being imposed if an offence has been detected through controls and criminal investigation
<b>T11 Severity of sanctions</b>	Severity and type of sanction and associated adverse effects caused by imposing sanctions e.g. loss of respect and reputation

# Table of 11: internet based software

**Justitie Tafel van Elf**

1.2.5 2008-01-15

T11 Help Application help About iT11 Password Log out

Logged in as: [Elena Ostrovskaya](#) [help](#)

(untitled)

Project management

Data

Checklist

T1

T2

T3

T4

T5

T6

T7

T8

T9

T10

T11

Test

Estimate

Interventions

## Checklist

official name of rule  
Core violation:  
Target group:

### T1 - Knowledge of the rules

#### Familiarity and clarity of legislation among the target group [help](#)

**a. Familiarity**

1.1 Does the target group know the rules?  No  Yes

1.2 Do they only need to make limited efforts to find out about the rules?  No  Yes

1.3 Is the legislation not too elaborate?  No  Yes

**b. Clarity**

1.4 Are the rules formulated in such a way that the target group can understand them easily?  No  Yes

1.5 Is the target group actually capable of understanding the rules?  No  Yes

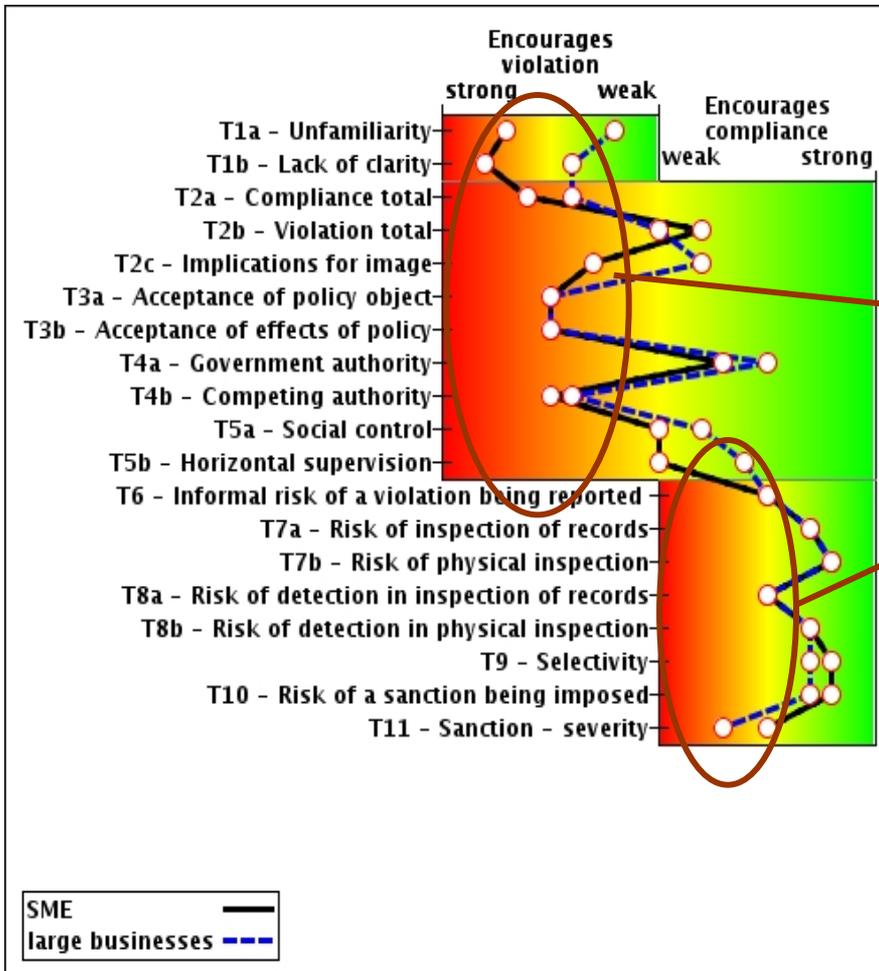
1.6 Is it sufficiently clear to the target group what the rules apply to?  No  Yes

1.7 Is it clear to the target group what rule applies?  No  Yes

[Report](#)  
[Erase](#)

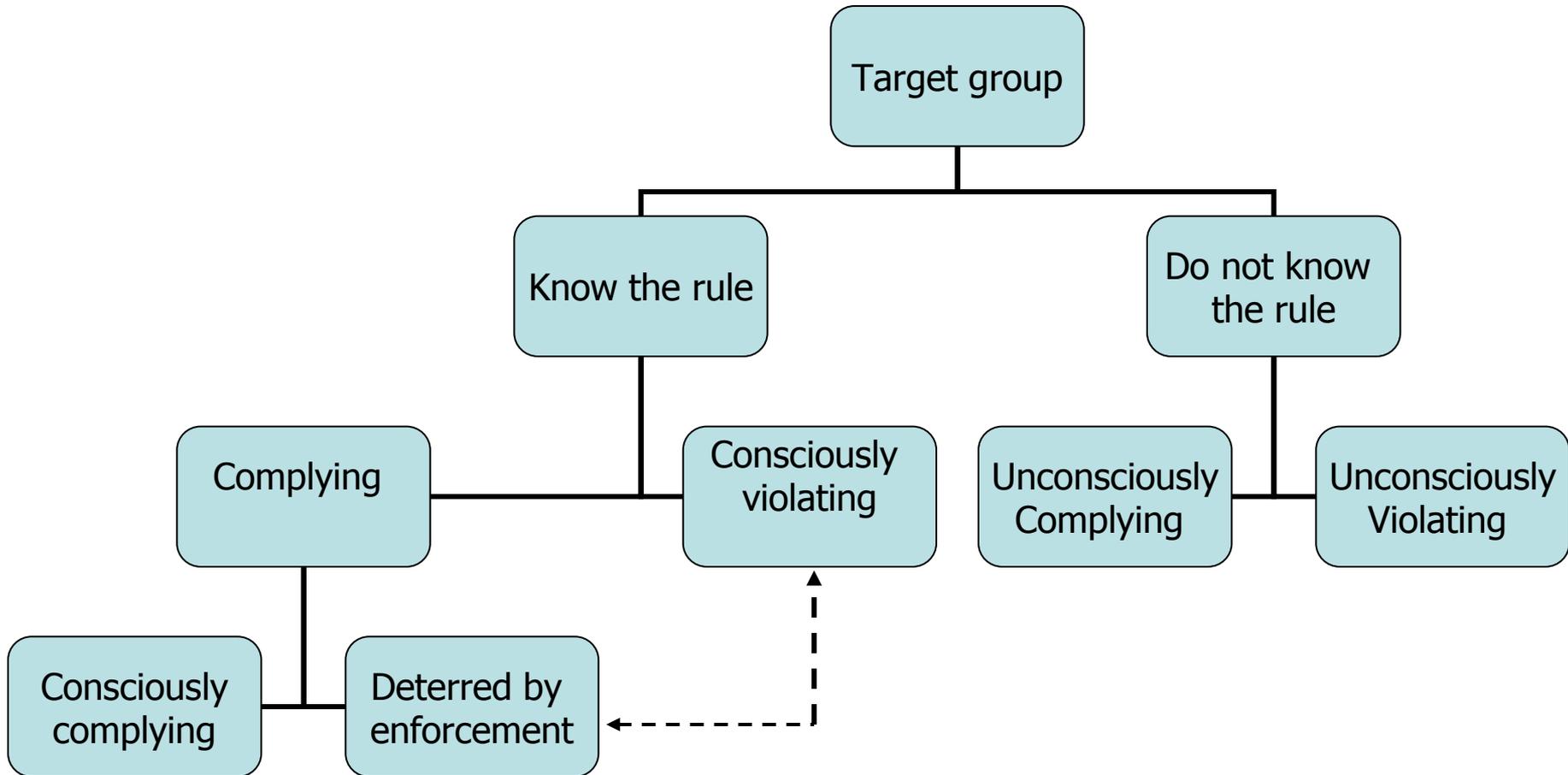
**Next >**

# Table of 11: Compliance profile



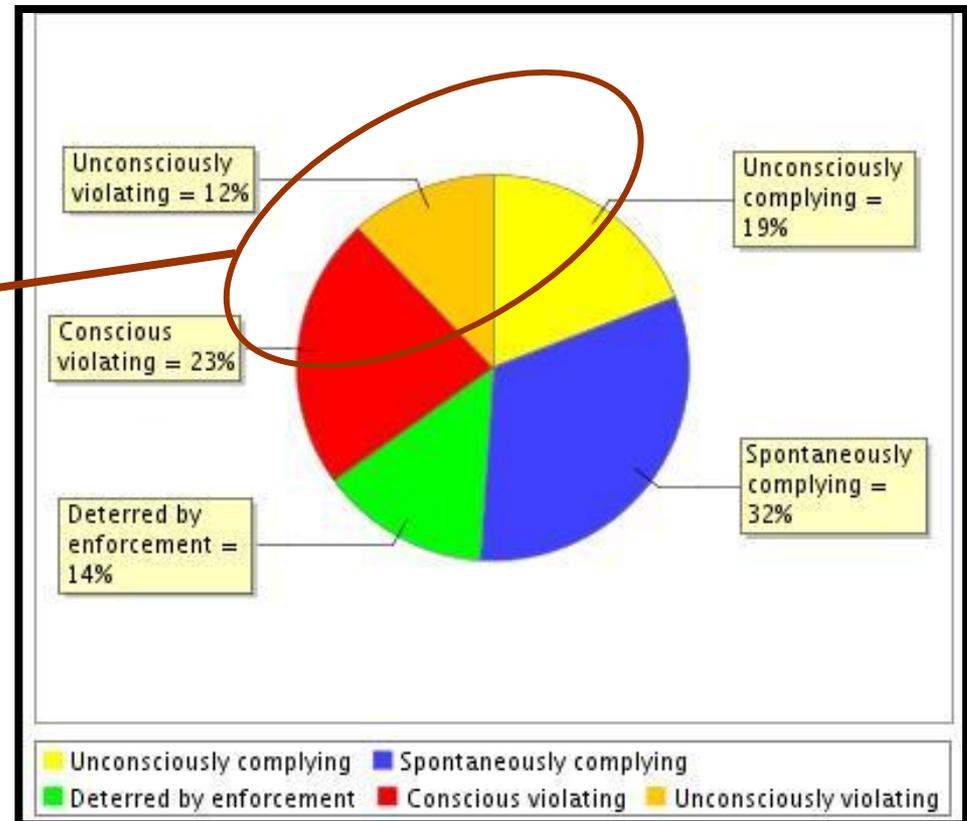
Require enforcement attention!

# Table of 11: Compliance estimates



# Table of 11: Compliance estimate

Require enforcement attention!



# “Table of 11” application to case studies

## Kenya

the Kenya Fisheries Act (1991)

Region: Lake Victoria

Enforcers: 36

Compliers: 24

## Rwanda

Environmental Organic Law (2005)

Region: Kigali

Enforcers: 13

Compliers: 13

## Nigeria

Law for Preservation and Control of Forest (1992)

Region: Ogun

Enforcers: 11

Compliers: 11

## Tanzania

National wastewater management legislation

Region: Dar-es-Salam

Enforcers: 38

Compliers: 15

## China

Water and Soil Conservation Law (1991)

Region: Inner Mongolia

Enforcers: 8

Compliers: 8

## Bosnia and Herzegovina

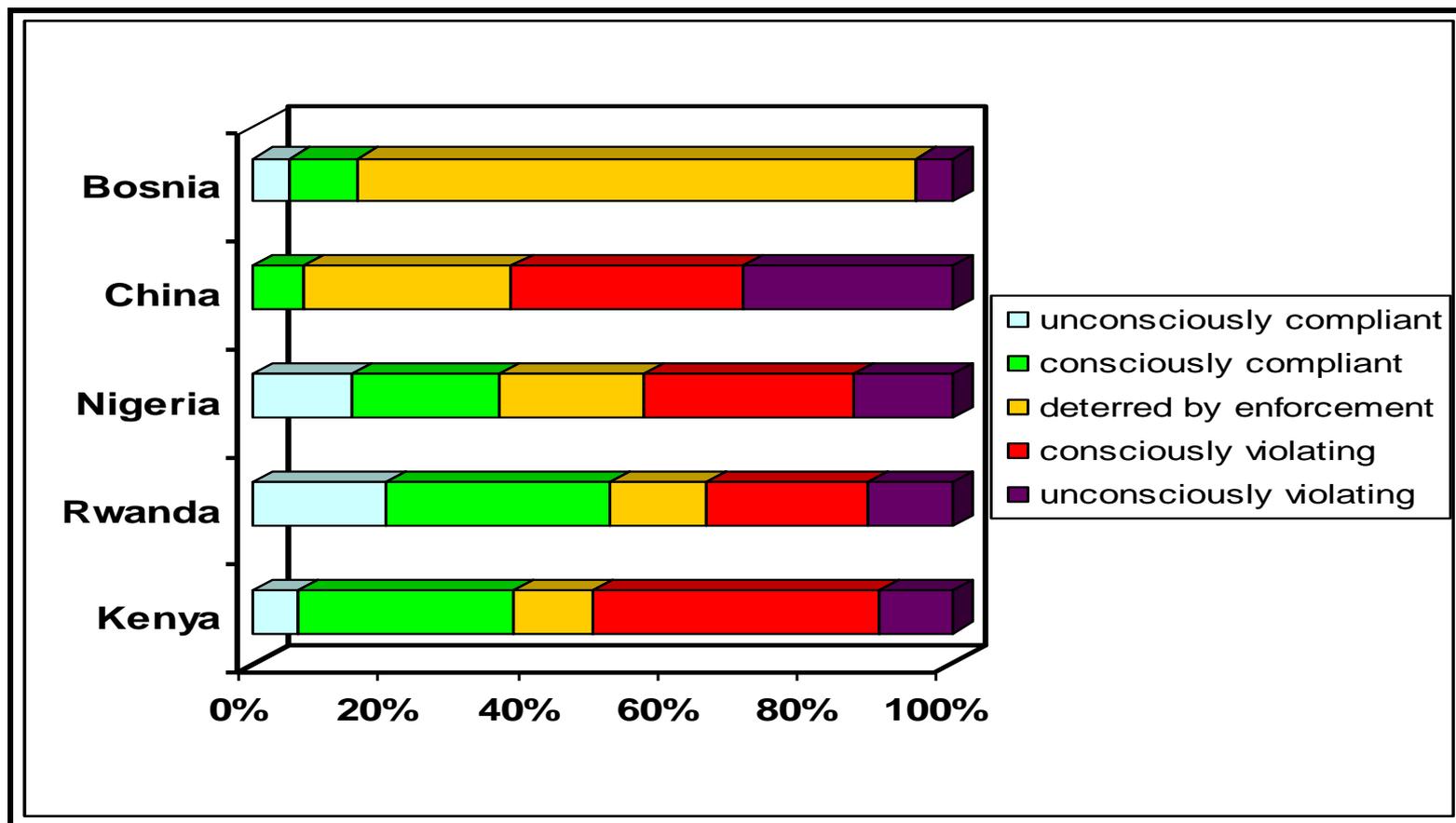
Law on Surface Water Pollution (1998,rev.2003)

Region: Sarajevo canton

Enforcers: 11

Compliers: 11

# Compliance estimates



# Motivations

“Table of 11” dimensions	Kenya	Rwanda	Nigeria	Tanzania	China	Bosnia and Herzegovina
Knowledge of law	Green	Red	Yellow	Red	Green	Green
Clarity of law	Green	Red	Yellow	Red	Green	Green
Cost/benefit of compliance	Yellow	Green	Yellow	Yellow	Red	Green
Cost/benefit of violation	Red	Green	Red	Red	Red	Green
Implications for image	Yellow	Yellow	Yellow	Green	Green	Green
Policy acceptance	Green	Red	Red	Yellow	Yellow	Yellow
Respect for official authority	Green	Yellow	Yellow	Red	Yellow	Green
Social control	Red	Yellow	Yellow	Red	Red	Yellow
Risk of reporting	Yellow	Red	Green	Yellow	Red	Green
Risk of inspection	Yellow	Green	Green	Yellow	Yellow	Green
Risk of detection	Yellow	Green	Green	Yellow	Yellow	Green
Selectivity of inspection	Red	Red	Yellow	Yellow	Yellow	Yellow
Risk of sanction	Green	Red	Green	Green	Red	Green
Severity of sanction	Red	Red	Red	Yellow	Red	Green

# Conclusions from “Table of 11”

- Table of 11 deals with perceptions, not real facts!
- There is a difference between *INTENTION TO COMPLY* and *ACTUAL COMPLIANCE*!
- People can change their behavior → need for continuous monitoring!

# Water Management Inspectorate: enforcement in the Netherlands' water sector

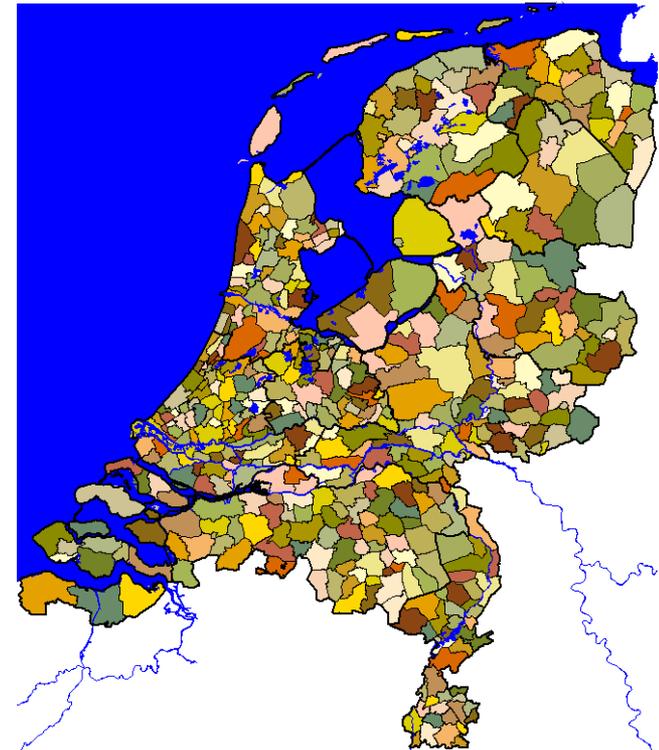
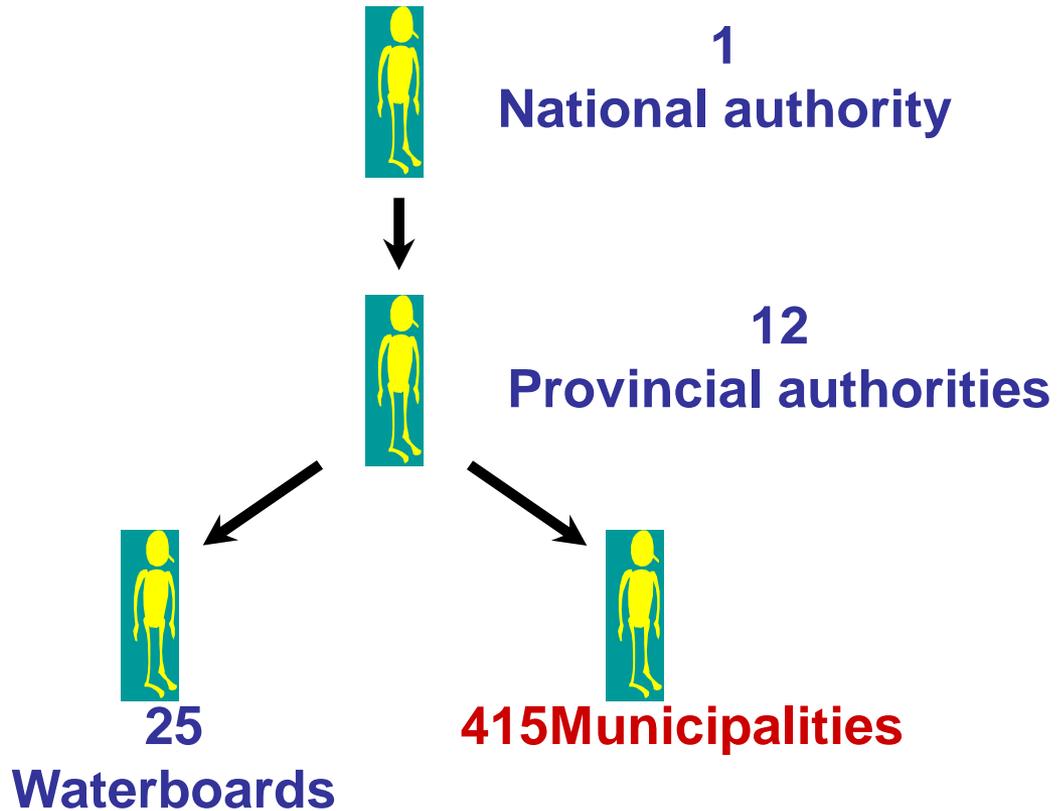


# Multi level

Ministry: policy

Rijkswaterstaat: implementation

Inspectorate: inspection



# Water Management Inspectorate: Responsibilities

- Direct advice and consultation to (Deputy) Minister
- Inspections of the National Water Authority (NWA)
- Inspections of Water Boards and provincial agencies
- Information to Parliament and public
- Advice to policy department

# Water Management Inspectorate: Supervision

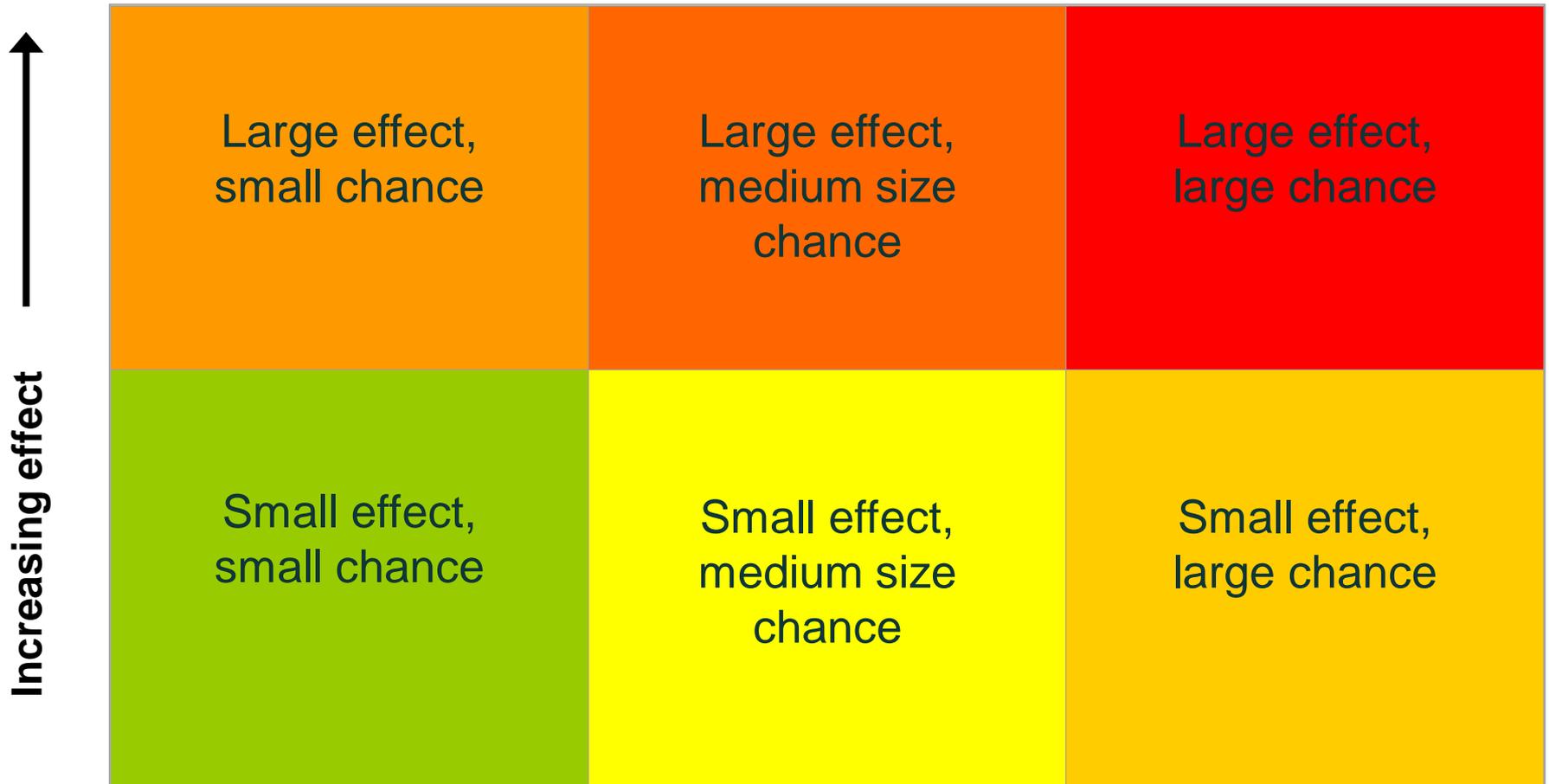
- The tasks performed by the agencies under supervision of the Inspectorate:
  - Water quality: emissions from industry, and from communal installations
  - Water quantity: flood protection, maintaining water levels
  - Infrastructure: dredging companies
  - Functioning: inland navigation / shipping

# Risk analysis

More tasks than capacity or funds available?  
Prioritize!

- How? Risk analysis is used (risk is a function of chance and effect)
  - Largest **chance** to fail
  - Largest **effects**
- ‘Compliance’ is included in the risk analysis
  - Not enough **compliance**

# Risk estimation

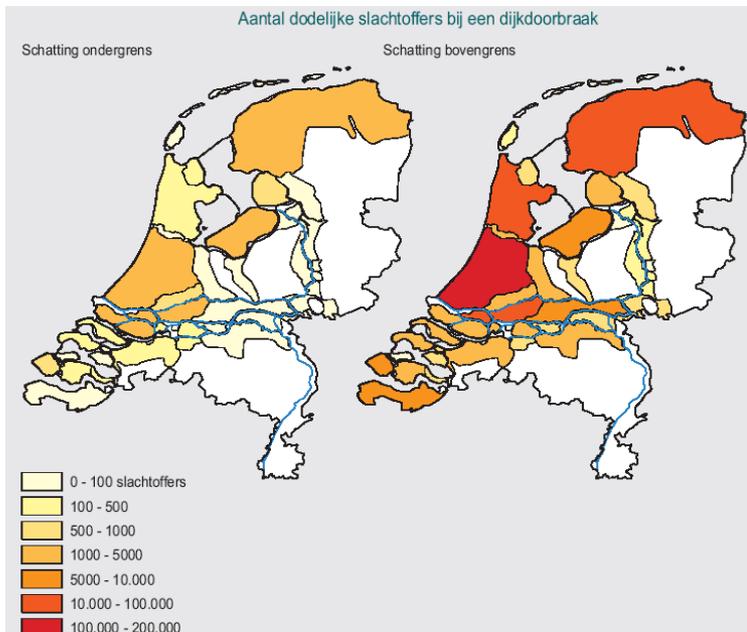


Increasing chance

Based on Roeters, 2007

# Safety of dikes

3000 km of dikes



Estimated number of victims  
of flooding

Based on Roeters, 2007



# Compliance

- Compliance analysis (risk analysis tool for enforcers):
  - Estimation of the level of compliance
  - Motivations for (non-) compliance
- Compliance deficit:
  - Gap between aimed level of compliance and estimated/measured level of compliance

# Planning of the inspections

- Inspection program (operational planning document):
  - 60% planned, using the risk estimation
  - 20% planned, not using the risk estimation
  - 20% unplanned, for ad-hoc topics
- Division into
  - 70% National level water management
  - 30% Regional water management

# Netherlands = wetlands

