

Global Safety

Handling Complex Societal Issues Policy Making

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outline

theory of

the methodology **COMPRAM** and the field of societal complexity

DeTombe

real life examples of global safety

climate change

DeTombe, D. (2008), Climate change: a complex societal process; analysing a problem according to the Compram methodology, *Journal of Transformation & Social Change*, 5.3, pp.235-266, doi:10.1386/jots5.3.235/1

economy credit crisis

<http://www.springer.com/home?SGWID=0-0-1003-0-0&aqlId=1885160&download=1&checkval=81fae0e111111da4d0de253b015a512e>

•



global safety threatened by

causes

natural threats:

global : virus (birds) flu HIV/AIDS

local : hurricane flood avalanche
earthquake tsunami

man made threats:

global :

climate change

world wide financial system credit crisis

terrorism

internet

local :war

nuclear power plant

traffic

pollution

agricultural industry (BSE)

natural threats: global :

virus HIV/AIDS





bird flu pandemic

avian influenza



local natural disaster hurricane

Katrina New Orleans USA 2005



local natural disaster flood



Compram-DeTombe

local natural disaster avalanches



avalanches in tourist's areas

Effects of the 1995 Kobe, Japan, Earthquake

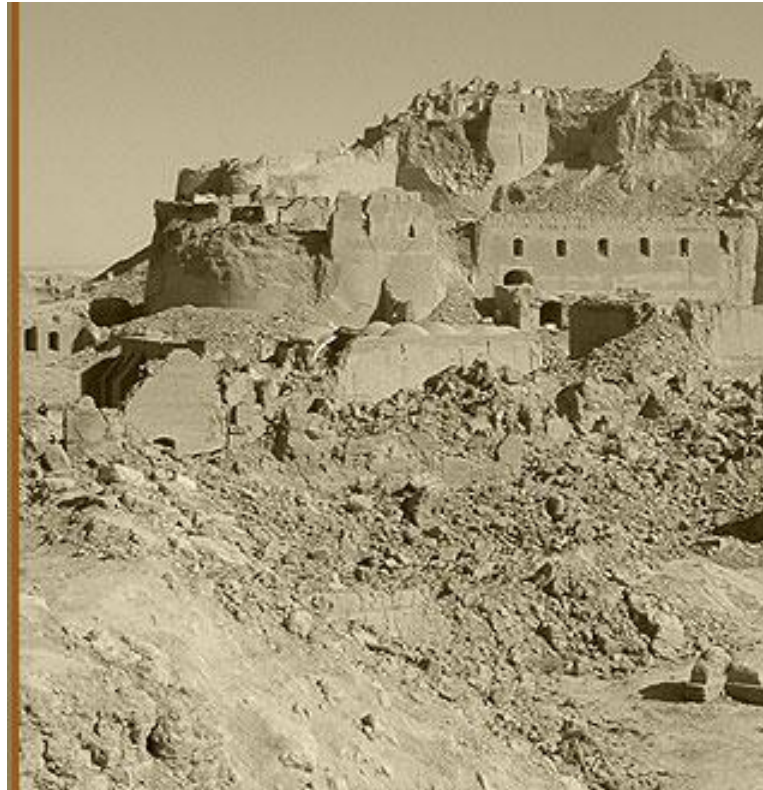


Fig. 18.18

Reuters/Corbis-Bettmann

local natural disaster earthquake

BAM Iran 2003



local natural disaster tsunami



local natural disaster tsunami

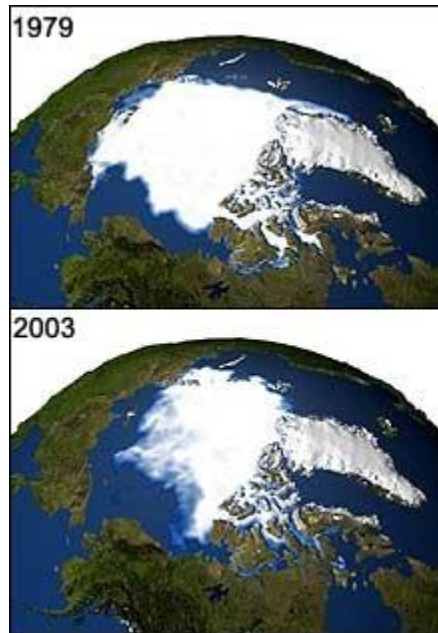


local natural disaster



Tsunami 2004 Atjeh

man made threats global: melting ice caps



man made threats: global
real estate prices USA 2006>



man made threats: global: terrorism

Madrid 03/11 2004



De eerste minuten na de aanslag helpen de overlevenden de zwaargewonden uit de trein en bedekken ze de doden met kledingstukken. (Foto Reuters)

man made threats: global: terrorism



man made threats: global: internet



man made threats: local

war



man made threats: local

war hunger rape

societal disruption



man made threats: local



nuclear
power
plants

man made threats local:

triple disaster Japan 2011: earthquake, tsunami, nuclear melt down Fukushima Tepco





Fukushima Daiichi Nuclear Power Plant

Okuma, Japan

37 25 18N 141 01 56E





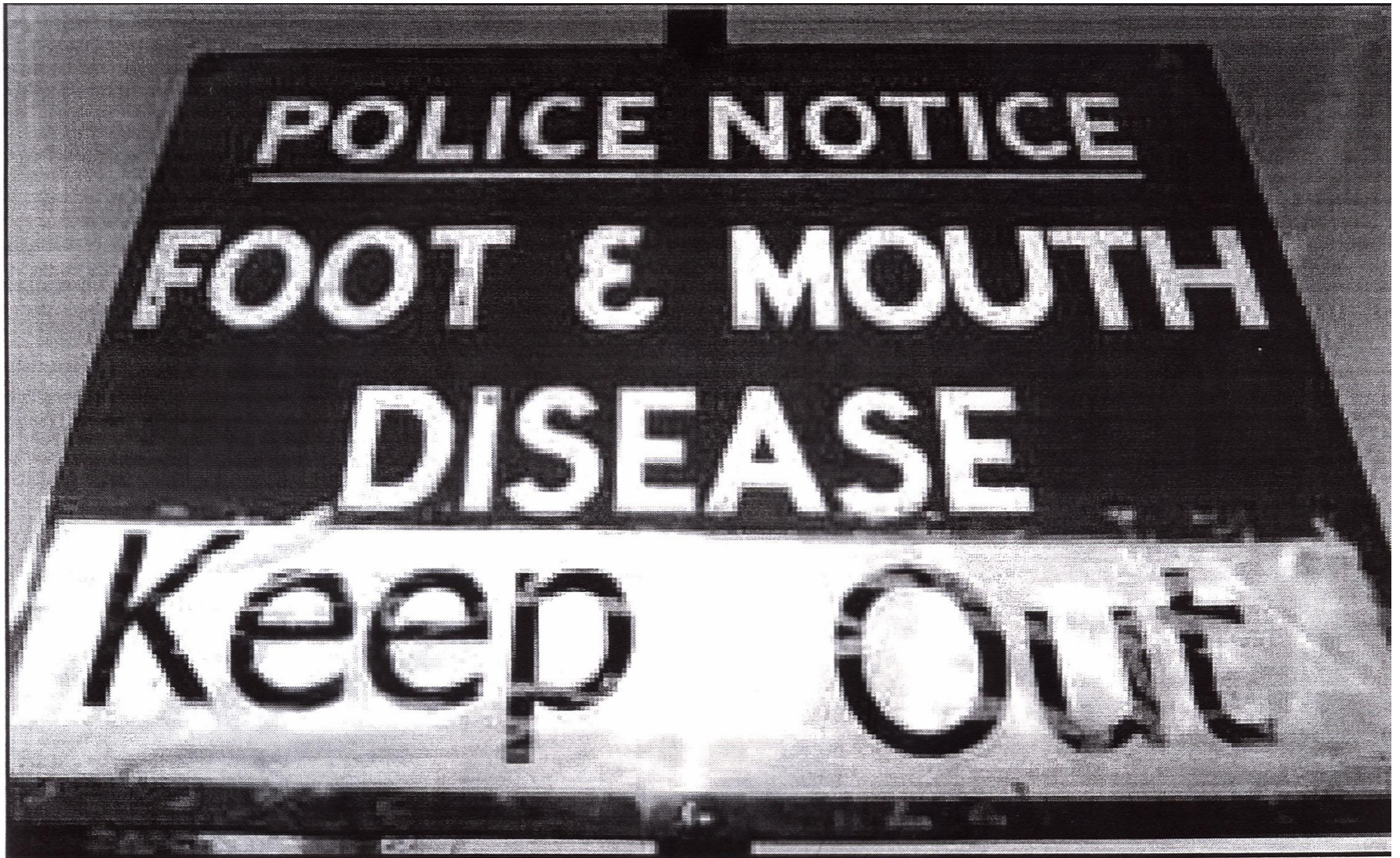
 **Mouth***news.com*
Give of the World Community

natural threats: local
chicken farms fowl plague virus



De vogelpest kostte gisteren een groot deel van de kippen van boer Van Kampen in Scherpenzeel, in de
eelderse Vallei, het leven. (Foto Erik Brinkhorst)

man made threats: local agricultural industry



foot and mouth disease

man made threats: local
pollution





man made threats: local traffic

safety basic need

democracy task of the government

where does the danger comes from

each threat has different causes and different effects

what is going on

what is involved

who are involved

who benefits

who suffers

how to create sustainable interventions?

careful scientific analysis

causes and effects

phenomena, actors

political vulnerability

before suggesting changes

growing gap between complexity and capability to handle

monodisciplinarity not sufficient for handling
complex societal problems

needed is multi disciplinary scientific based approach



Complex problem handling methodology DeTombe

Selected by the OECD to handle Global safety

Theory 1
short overview

complex societal problems differ much from each other

however

can be analyzed, handled and evaluated in the same way

along the lines of the methodology of societal complexity

the **COMPRAM** methodology on many fields applicable

handling complex societal problems is:
dealing with complexity

involved are:

many disciplines

many actors

together:

analyzing the situation

making decisions

implementing

evaluation



COMPRAM methodology: 3 basic elements

each complex societal problem has a

knowledge

power

Emotion element

knowledge experts multidisciplinary

power actor/stakeholders
emotion towards the problem
through the process

handling process:

start with problem owner

guided by a facilitator

COMPRAM methodology: steps

step1 team of experts model the issue **knowledge**

step 2 actors model the issue **power**

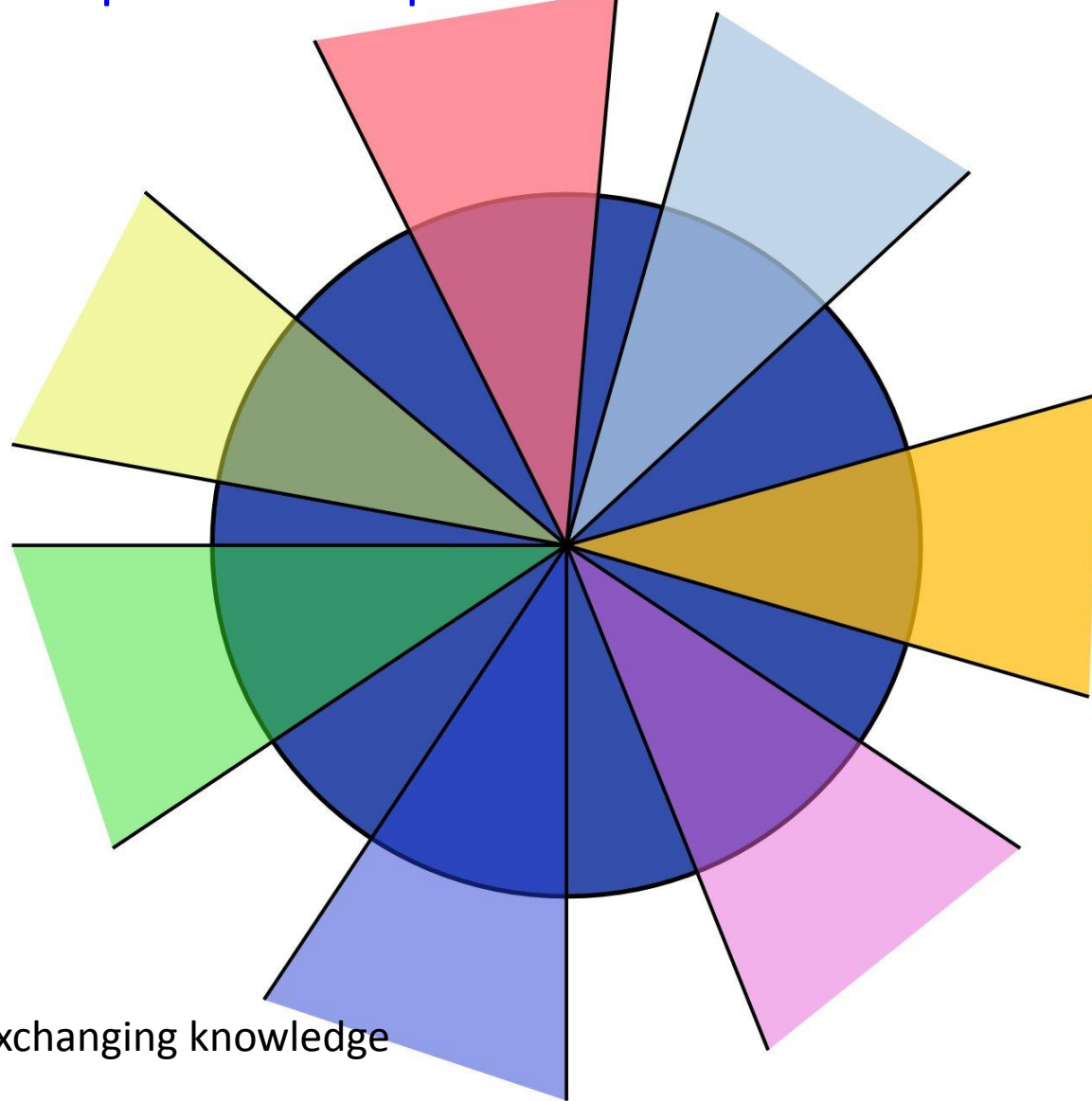
step 3 experts + actors find interventions

step 4 societal reactions **emotion**

step 5 interventions implemented

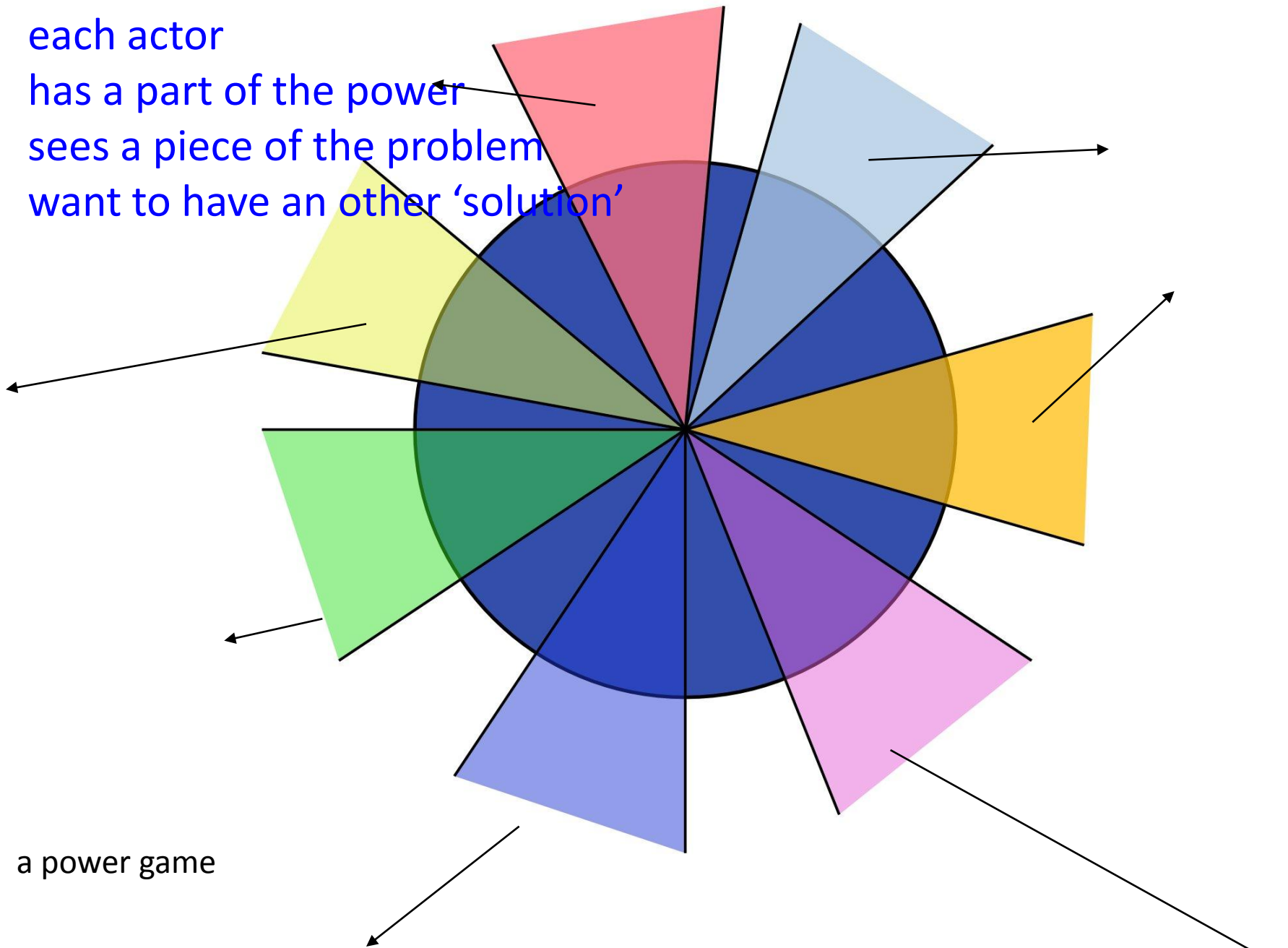
step 6 interventions evaluated

each expert sees a piece of the problem



communication and exchanging knowledge

each actor
has a part of the power
sees a piece of the problem
want to have an other 'solution'



a power game

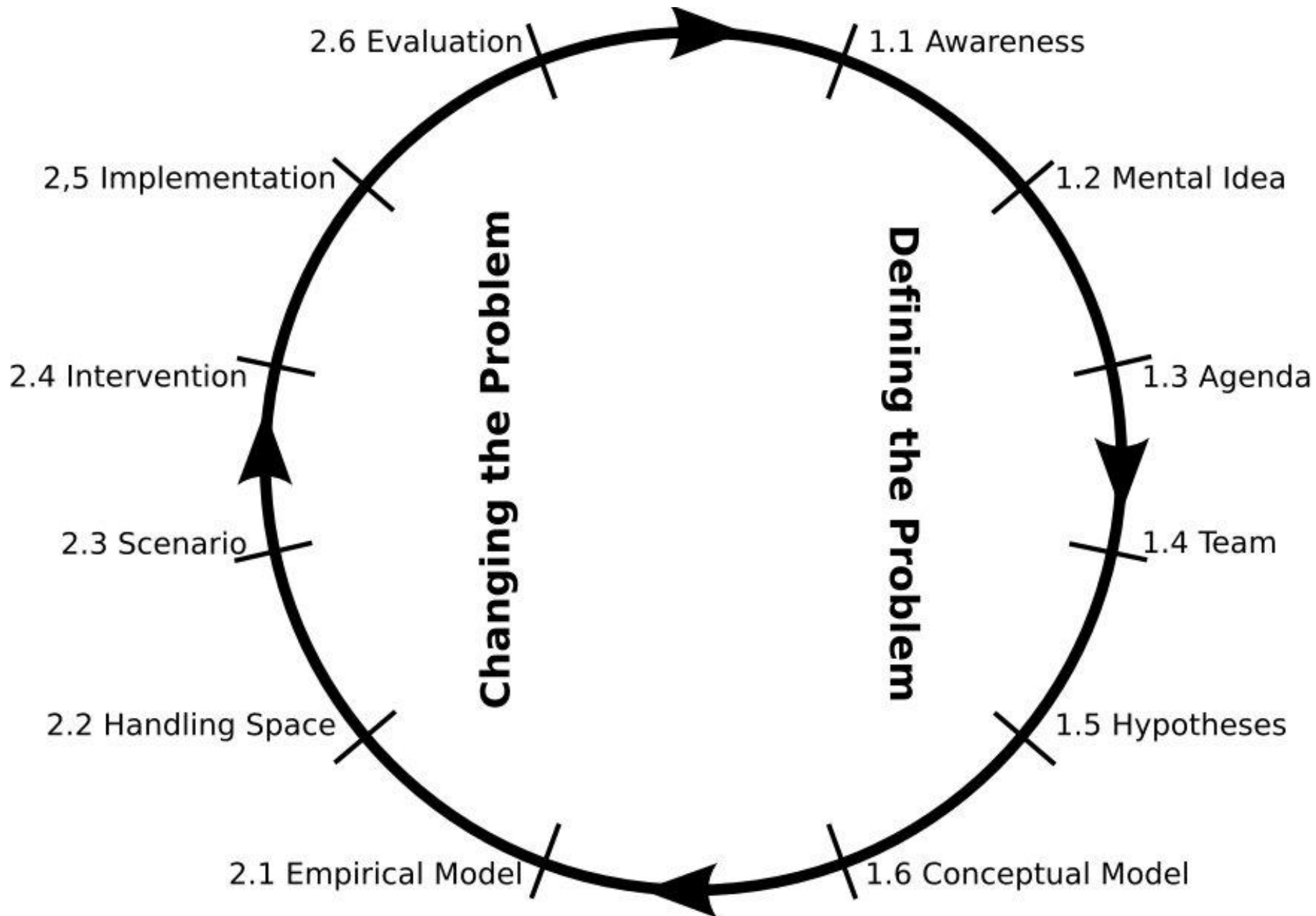
phases of the problem handling process
from
awareness to evaluation interventions

defining the problem

awareness	mental idea	agenda	team	hypotheses	conc.model
<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>1.5</u>	<u>1.6</u>

changing the problem

emp. model	handling space	scenario	intervention	implementation	evaluation
<u>2.1</u>	<u>2.2</u>	<u>2.3</u>	<u>2.4</u>	<u>2.5</u>	<u>2.6</u>



COMPRAM methodology:=====

and phases of the problem handling process

defining the problem

awareness mental idea agenda team hypotheses conc.model
__1.1__ __1.2__ __1.3__ __1.4__ __1.5__ __1.6__

=====

changing the problem

emp. model handling space scenario intervention implementation evaluation
__2.1__ __2.2__ __2.3__ __2.4__ __2.5__ __2.6__

=====

climate change / global warming

a complex societal problem

analyzing according to the COMPRAM methodology

example real life 1

climate change

defining the problem

phase 1.1 awareness

is the climate changing **too fast ?**

from 1990 on

scientifically debates on climate change

popular debates

publications in daily news papers

'an inconvenient truth' Al Gore, 2006 movie (manipulative)

yearly political debates from 1995>

f.i. Kyoto 1997 / Bali 2007/ Durban 2011

United nations conference on climate change (COP)

what is happening?

will the temperature rise 2 to 3 degrees Celsius in the next 100 years?

what are the effects?

temperature rising → melting icecaps → rising of sea level → floods in low coastal areas

melting ice caps



Potential impact of sea-level rise on Bangladesh

Today

Total population: 112 Million

Total land area: 134,000 km²



1.5 m - Impact

Total population affected: 17 Million (15%)

Total land area affected: 22,000 km² (16%)



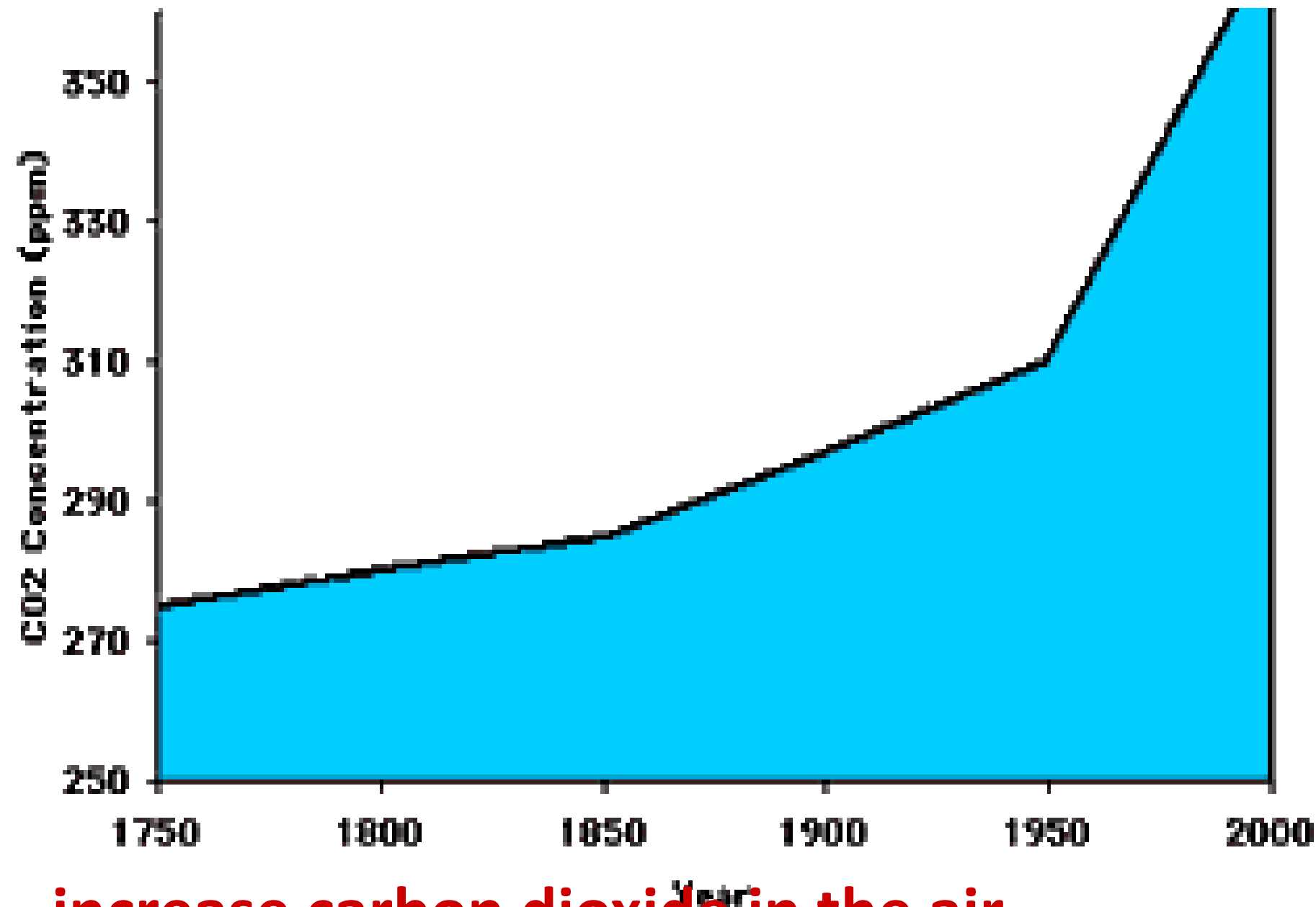


The Netherlands below sea level

climate change

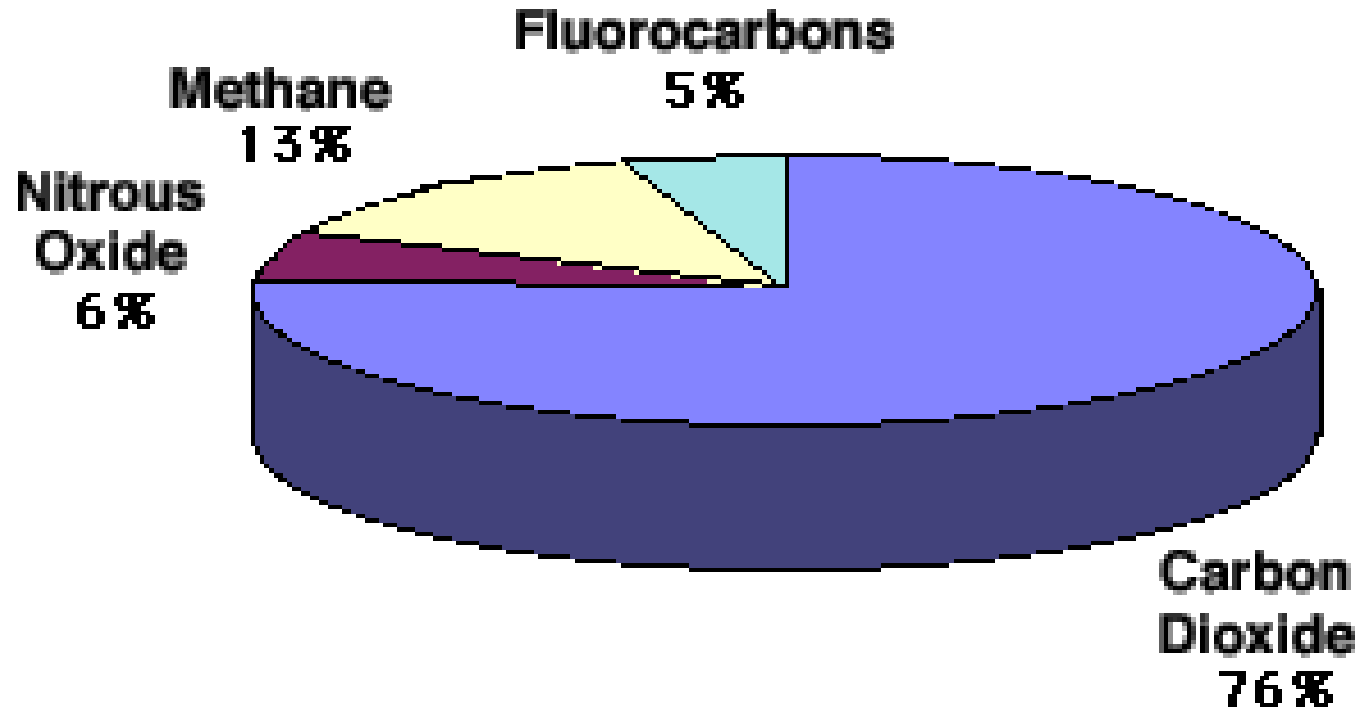
defining the problem

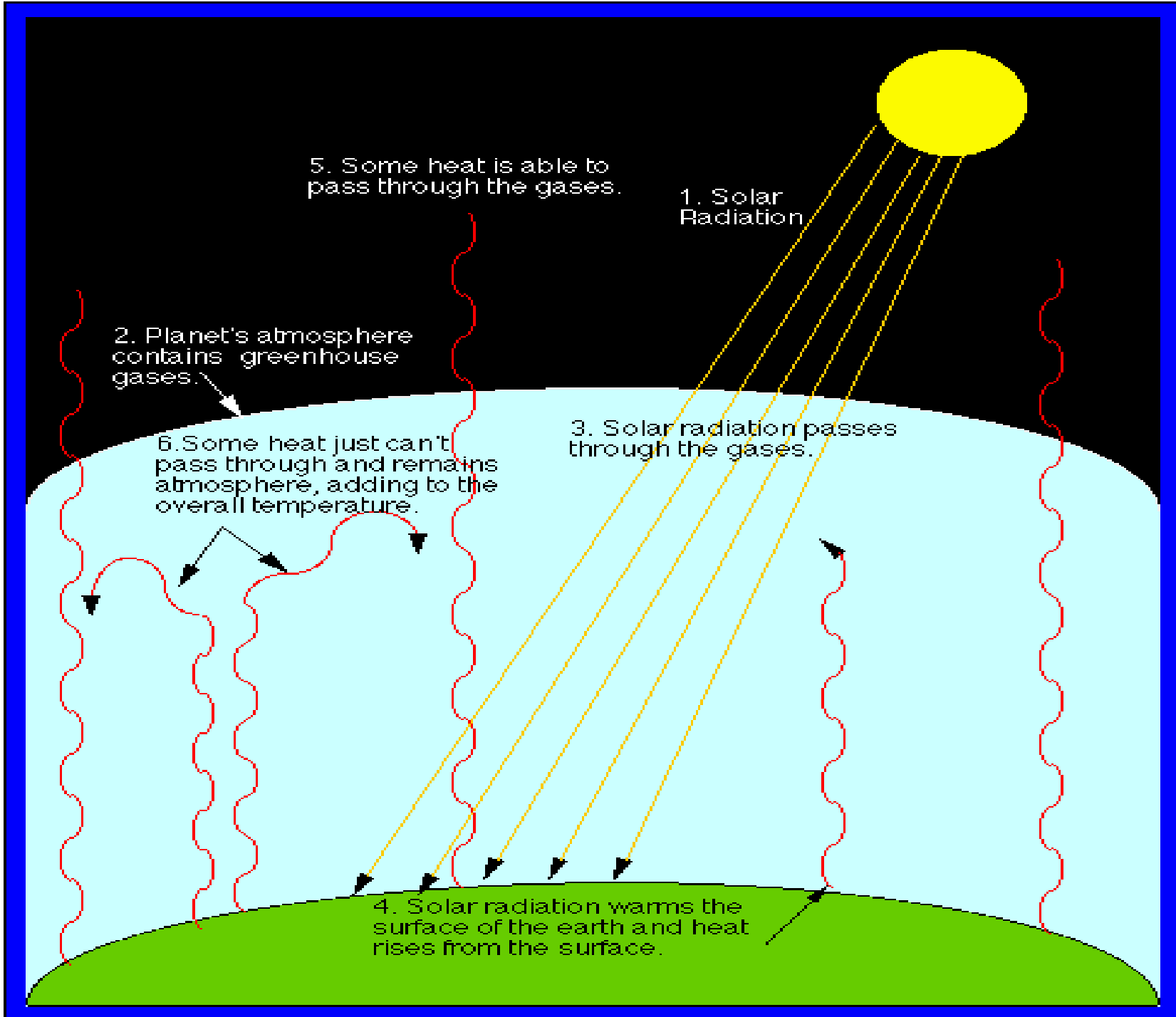
phase 1.2 extending the mental idea by reading thinking and discussing



increase carbon dioxide in the air

Greenhouse Gases





climate change

defining the problem

political agenda

yearly political debates from 1995>

Kyoto 1997 / Bali 2007 / Durban 2011

United nations conference on climate change (COP)

fast climate change is a complex societal problem

should be analyzed, handled and evaluated

along the lines of the methodology of societal complexity

climate change

defining the problem

phase 1.4

problem owner local government/ G7/ G20

facilitator

Step 1 Compram methodology

problem handling phase 1.4

step 1.1 of the Compram methodology:

the facilitator invites experts

COMPRAM methodology: activities

step 1a knowledge experts

facilitator **invites** experts based on vague idea of the problem

experts **discuss** in 6 meetings the problem

define the problem: by making conceptual model of the problem

report

experts

economy

communication

law

psychology

healthcare

biology

mining

politics



knowledge

media affairs

transport

agriculture

pollution

poverty

coast

chemistry

knowledge different disciplines

geology : fossil remains and layers mining and drilling

chemistry : burning fossil fuel and processing into oil, gas and cokes for energy, CO2 and other bio gas emission

energy industry : production of energy /alternative energy

economy: prices of energy and alternative energy

law : rules, regulations, restriction and steering elements

psychology : emotions: fear and anger
willingness to use alternative energy or accept sustainable living

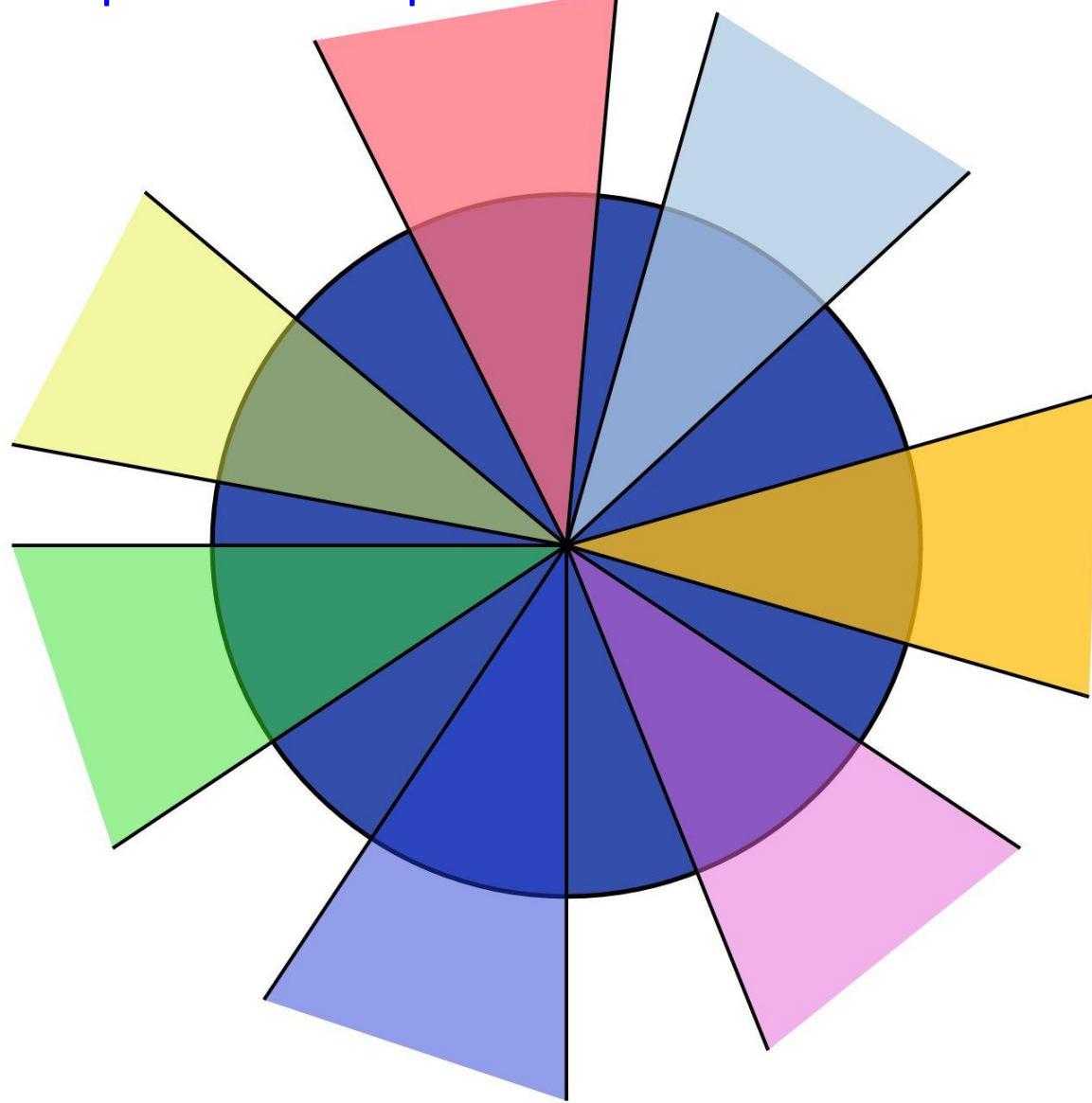
politics : elections

biology : effect on different species

agriculture : food production

theories of different disciplines are needed to understand what is going on

each expert sees a piece of the problem



COMPRAM methodology: activities

subject of discussion with the experts:

how does the problem look like
what are the causes

how is the problem developed in the past
how will it develop in the future

which phenomena are involved
which actors
what power do they have

what is the status of the knowledge: theory or assumption
how are the phenomena related with each other

climate change

defining the problem

Step 1.2 Compram methodology experts discuss: the past

the climate changes regularly during 4,6 billion years

scientifically debates fast climate change

19st century

[Joseph Fourier](#), 1827; [John Tyndall](#), 1861;

[Svante Arrhenius](#), 1896

future development uncertain



Avercamp (1608) Winterlandschap met Ijsvermaak
small ice period 1230-1850 in Europe

COMPRAM methodology: methods

COMPRAM is a framework methodology: it includes all kind of methods and tools

quantitative and qualitative methods

reading, discussing, exchanging knowledge,
interpreting new knowledge,

observation , interviews, describing in words,
explaining the concepts

what do we know about the causes and the effects

phase 1.5 of the problem handling process

step 1.2 of the Compram method

data gathering, exchanging knowledge

and forming hypotheses by experts

discussing issues like:

what really is happening with the melting ice caps is not sure.

what is the feedback effect of the changing of
the warm and cold
(under)current in the Atlantic ocean?

what is the effect of climate change on human health?

what is the effect on agriculture?

is the amount of cultural changing
because of changes in rainfall and dry periods?

what is the effect on different species?

are species vanishing and new ones arriving,
are species moving to other areas

because of the changing temperatures?

what is the relation CO₂ and the Ozone layer (O₃)?

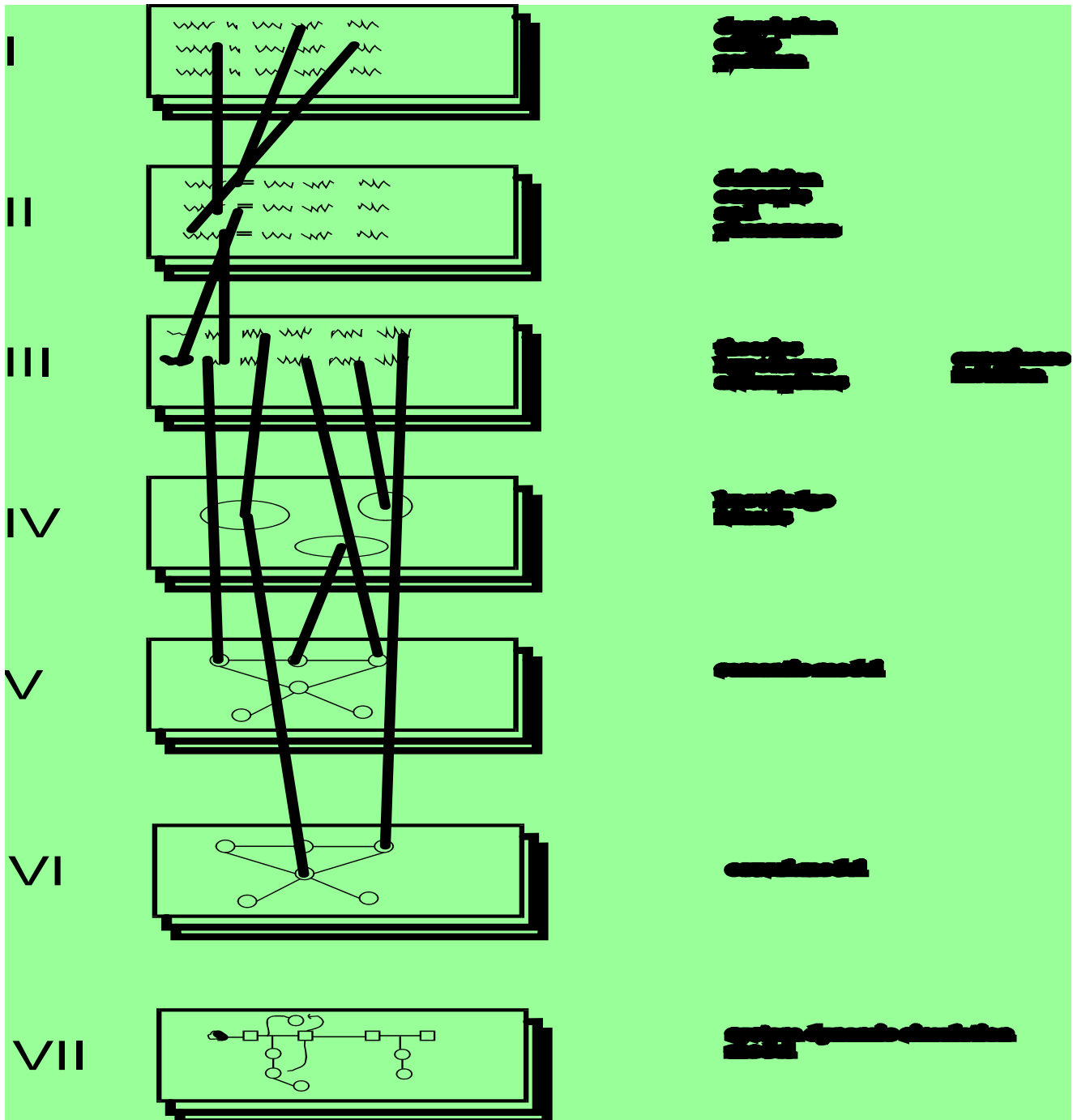
7-layer communication model

COMPRAM methodology: tools

tool: 7-layer communication model (DeTombe)
Group Decision Room

Group Decision Support Room

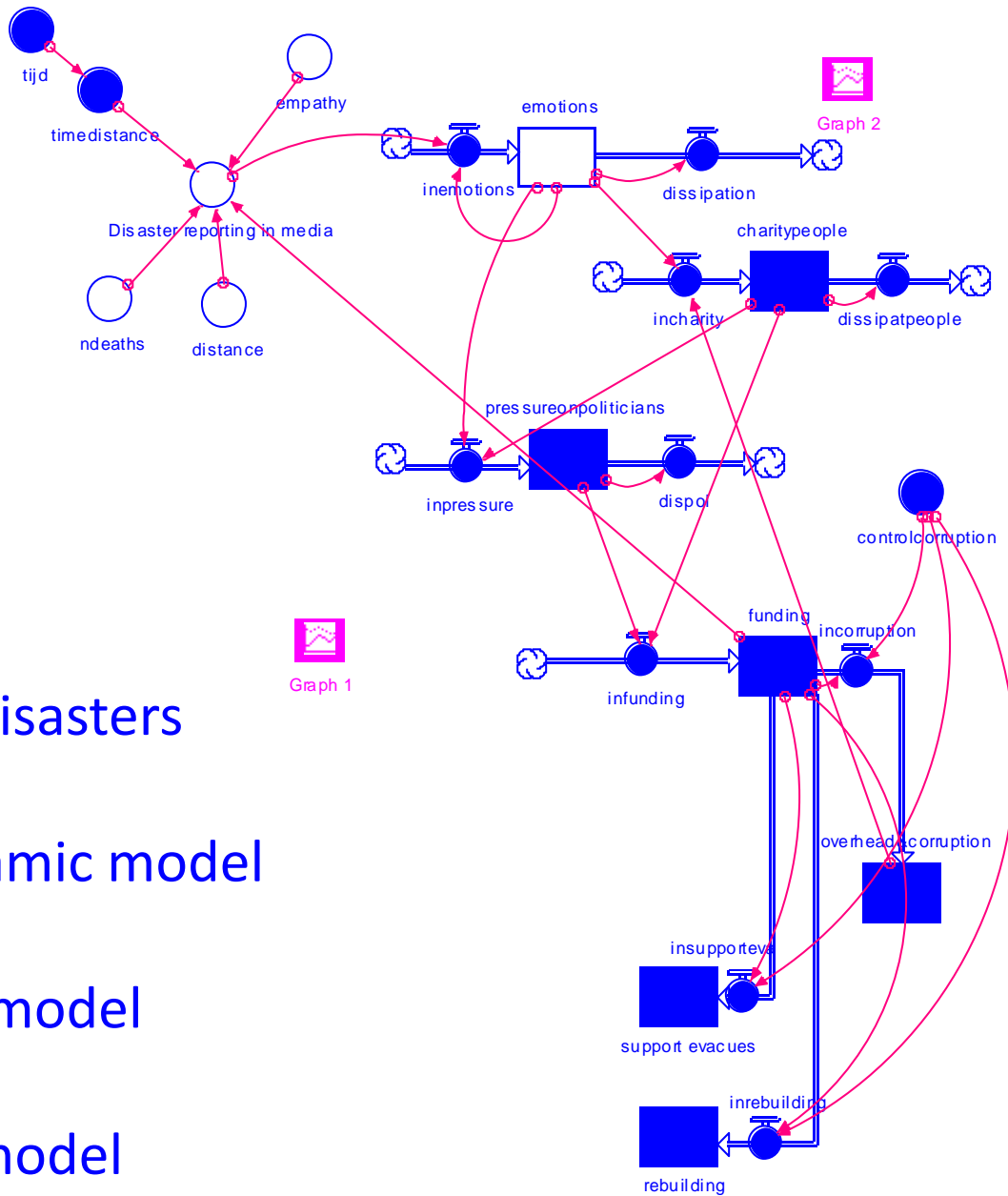




COMPRAM

The seven layer communication model
DeTombe (1994)

funding of disasters
system dynamic model
conceptual model
discussion model



causes of climate change / global warming



fossil fuel

Compram-DeTombe

75



cow gaz methane CH₄

Compram-DeTombe

burning tropical woods



burning woods CO₂ carbon dioxide



deforestation and forest fires

increase CO₂/ greenhouse effect

forests and wooded areas are natural carbon sinks

trees absorb carbon dioxide, and release oxygen photosynthesis.



HFC's

formulating the conceptual model

phase 1.6 problem handling process

step 1.3 of the Compram methodology

phenomena

actors

relations

small group benefits from burning fossil fuel

whole world is suffering from effect of biogases

privatizing the benefits

socializing the debts

changing the problem

emp. model handling space scenario intervention implementation evaluation

2.1

2.2

2.3

2.4

2.5

2.6

from conceptual model to empirical model and desired goal

discussing the handling space

suggesting scenario's

suggestion interventions

discussing implementation

evaluating changes

phase 2.1 empirical model of the problem and desired goal

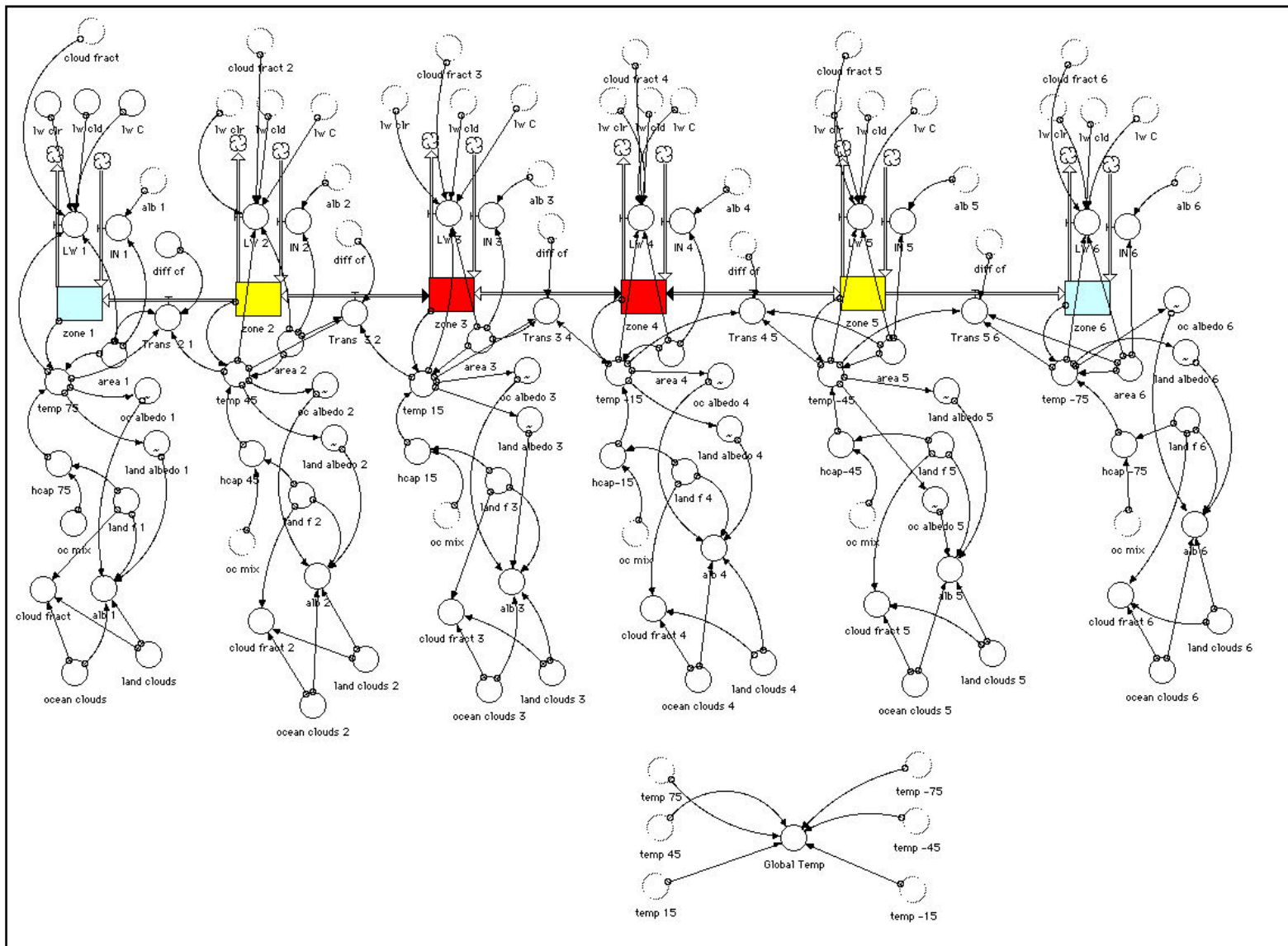
step 1.4 of the Compram methodology empirical model by experts

desired goal:

decreasing the emission of biogas (greenhouse)

CO₂ emission / CH₄ emission / N₂O emission

The Complete 6-Box Climate Model



phase 2.2 problem handling process

step 1.5 of the Compram methodology
handling space by experts

handling space

level

constrains

problem handling phase 2.3

step 1.6 of the Compram methodology:

experts discussing several scenarios

problem handling phase 2.4

step 1.7 of the Compram methodology:

experts finding interventions

discussing alternative energy sources

and life styles

alternative energy sources

nuclear power

sun energy

wind energy

water energy

nuclear power: danger waste and explosions



alternative energy

Hydro Power plant



Hydro Power plant on a river

www.envirolink.org/orgs/edf/sitemap.html

the experts do not have the power to implement their ideas

need

actors

step 2 actors: power

COMPRAM methodology: activities

phase 1.4 - 2.6

facilitator invites based on definition of the problem the actor groups

each actor group **discuss** (parallel) in 6 meetings

model with **7-layer model**

define the problem, desired goals, objections, support

report

Actors

energy company

mining company

agricultural business

water management

many parties

mining companies

energy industry, like Shell, Esso

transportation industry

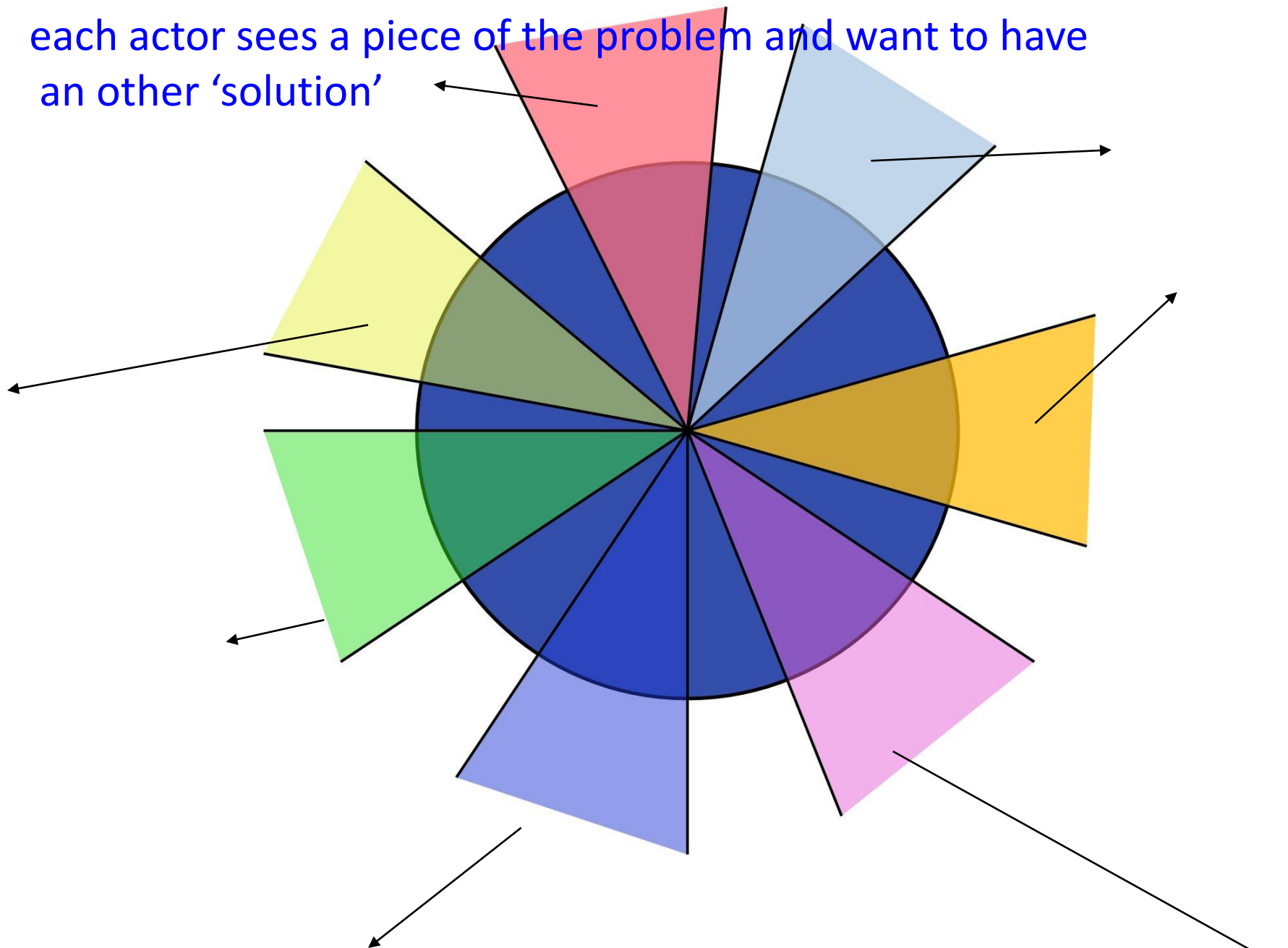
local and general governments

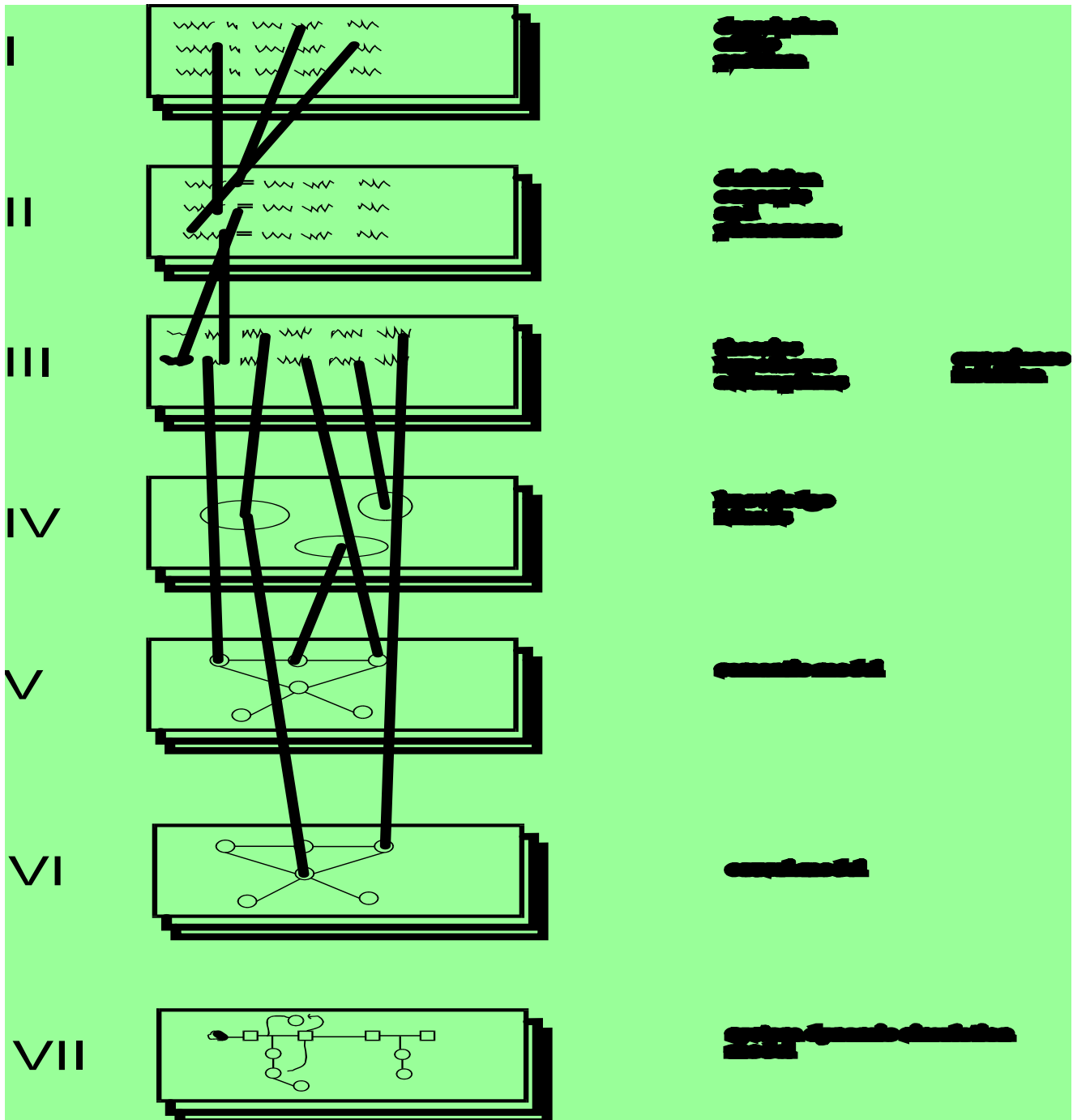
agricultural businesses

water management industry

companies in flood prevention and coastal preserve

each actor sees a piece of the problem and want to have an other 'solution'





COMPRAM

*The seven layer communication model
DeTombe (1994)*

step 3 agreement

problem handling phase 2.4

COMPRAM methodology: activities

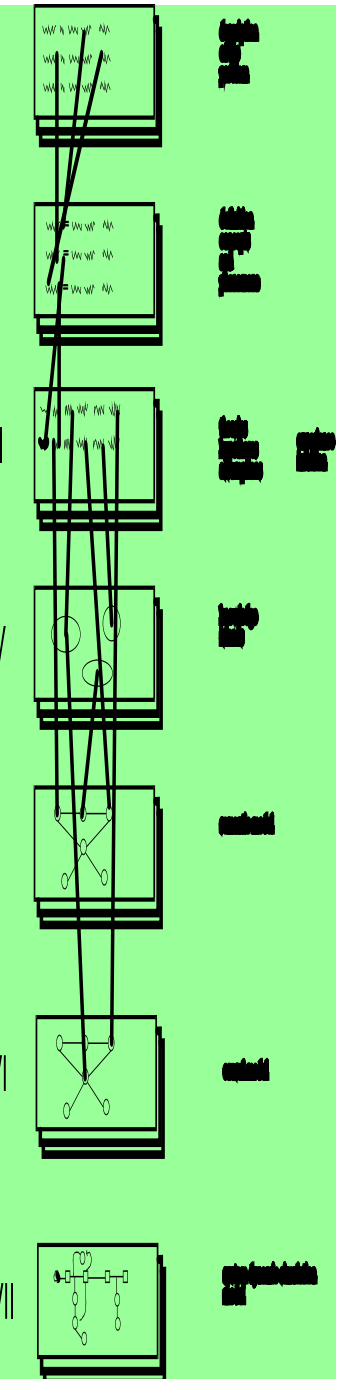
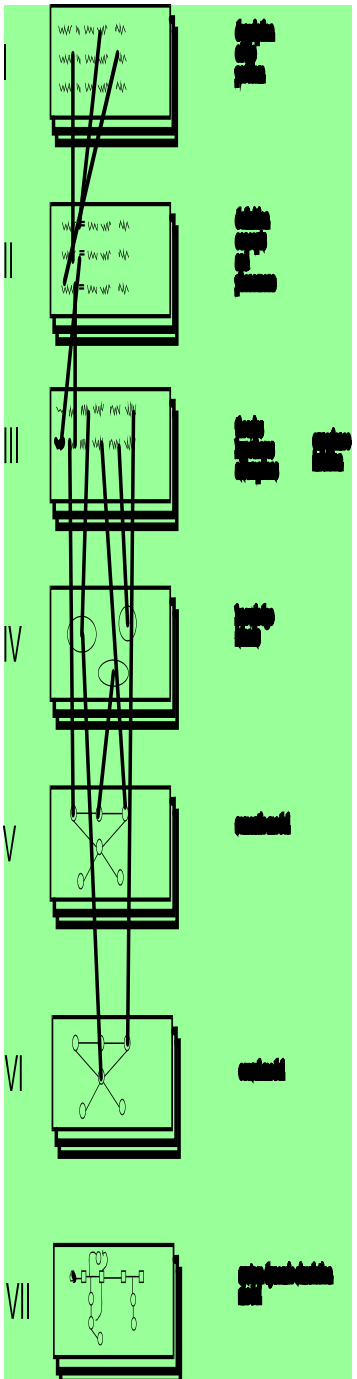
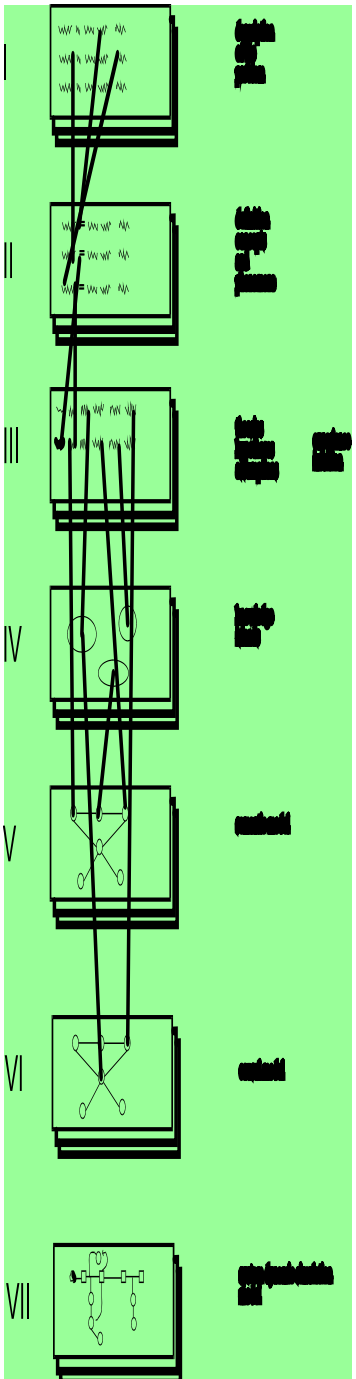
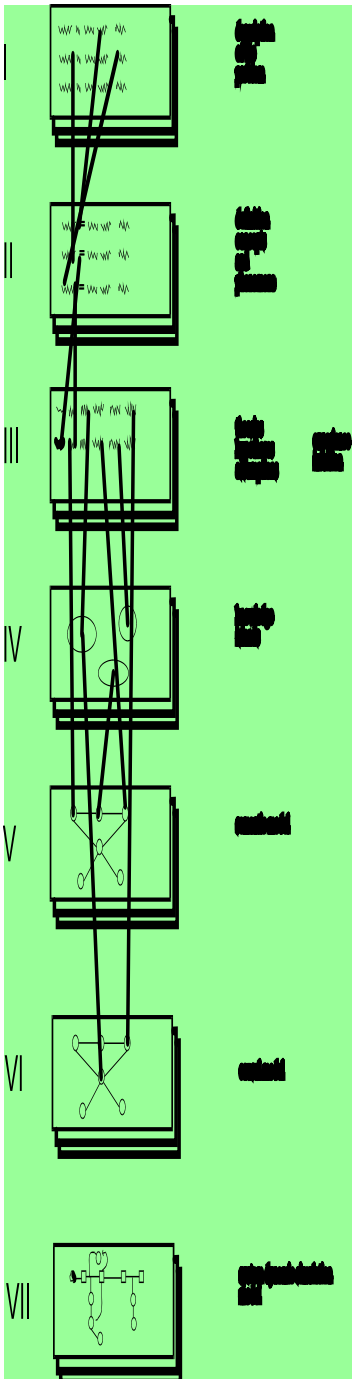
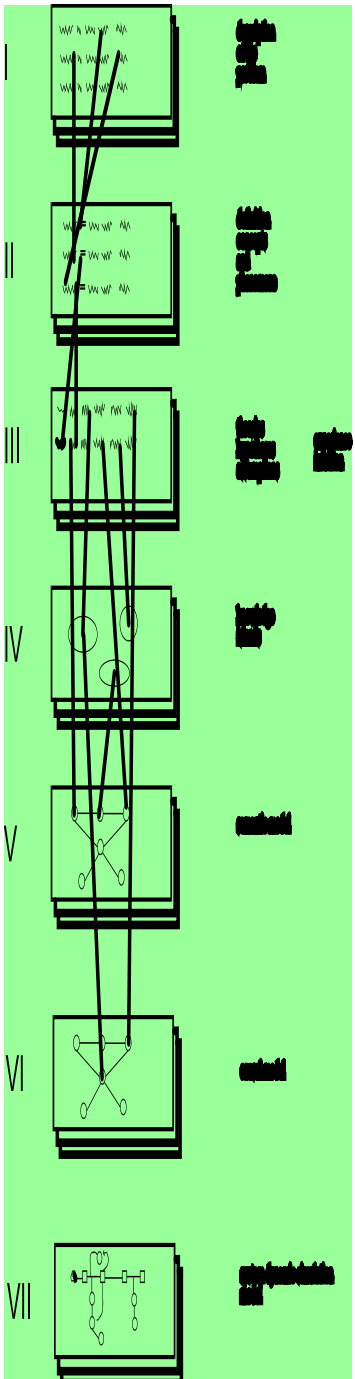
facilitator compares models experts-actors

discuss differences in several meetings

actors and experts find interventions

using gdss, scenario's, mcda, gaming etc.

report



step 4 societal reactions

COMPRAM methodology: activities

publish interventions

meetings with the public and media

analyze + react to the societal reactions

change interventions?

report

COMPRAM methodology: activities

problem handling phase 2.5

step 5 of the Compram methodology

implementation

implement interventions

guided by problem handling team

COMPRAM methodology: activities

problem handling phase 2.6

step 6 evaluation

evaluate the problem handling process
the change

evaluate this by the problem handling team and
by the public

report

need new changes?

start over again

Conclusion:

handling complex societal issue with the **COMPRAM** approach:

more structured

more transparent

more sustainable interventions

more democratic

less waste of time

less waste of money

needs academic level of working and thinking

handling complex societal issues

stays very difficult

complexity will never be simple

policy makers jump to conclusion

now and direct simple (technological) solutions

they waste our tax money

too much time

too difficult

too complex

do not want to take time to really analyse the problem

teach the subject of societal complexity

on universities in disciplines like

policy making

economy

healthcare

social science etc

OECD knowledge institutes to handle Global Safety

based on the ideas of COMPRAM methodology

JSF-RISTEX institute Japan (COMPRAM)

holistic approach

theory 2

definition of a complex societal problem

aspects of complex societal problems

problem

basic elements: knowledge

power

emotion

effect

solution

problem 1

real life problem

a large and often different **impact** on different groups of society

many phenomena involved

the phenomena are **complicated intertwined** in each other

problem 2

the problem suddenly '**pops-up**'

the problem is **dynamic** (changing)

future of the problem is **uncertain**

problem 3

difficult to become **aware**

difficult put it on the **political agenda**

difficult to get grip on, **to handle**

a **solution is not possible** only changes

problem 4

the problem is **interdisciplinary**

a **combination of theories** from different fields
needed to explain what is happening

basic elements:

knowledge

power

emotion

knowledge:

knowledge is **partly available**

white spots and **blind spots**

the **data are incomplete**, uncertain or
in contradiction with each other

power 1

actors / parties / stakeholders :

many parties involved

each party has a **different power**

each party has a **definition** of the problem

each party has different **goals and desires**

each party has a different **'solution'** in mind

.

power 2

actors / parties / stakeholders :

the parties have **different power**

the parties consist of **powerful groups** and **non-powerful groups**

powerful groups like large organizations and governments

non-powerful groups like groups of unorganized people

for **changing** the problem **many parties** are needed

emotions



effect

always man made effects

range: from global to local

large impact on society: humans, economy, stability of the state

different effects on different groups

includes: macro, meso and micro level

threats of man made causes: benefits privatized costs socialized

solution:

are not available or not possible

no solutions only changes

a 'solution' depending on which party you are

the problem has to be handled over and over again

Definition of Complex Societal Problems DeTombe 2005 (1)

a complex societal problem is a real life problem, which has a large however often different impact on different groups in the society. The problem has often an impact on all the levels of the society, on micro, meso and macro level.

Often it seems that the problem suddenly 'pops-up'. The problem is dynamic, it changes during its development. The future development of the problem is uncertain.

It is often difficult to become aware of the problem and difficult to put it on the political agenda. It is difficult to get grip on the problem and to handle the problem. Only changes are possible, no 'solutions'.

Definition of Complex Societal Problems DeTombe 2005 (2)

The problem has a knowledge, a power and an emotional component.

The problem consist of many phenomena which are complicated intertwined with each other. Often there is a lack of knowledge, the data are incomplete, uncertain or in contradiction with each other. The problem is interdisciplinary and it takes theories from different fields to explain what is happening.

There are many parties involved. Each party has a different view on the problem, a different definition of the problem, and has different goal and desires. The parties often have different 'solutions' for the problem. The different parties involved have different power over the problem.

The problem often provokes much emotion in society.

man made threats global:

credit crisis of Oct 2008

real life example 2 of a complex societal problem

effect

causes

phenomena

actors

defining the problem phase 1.1-1.6

phase 1.1 of the problem handling process: awareness

what happened? what are the effects?

what we see is :

people: sell homes, lose jobs, debts

bank: debts, bankruptcy

countries: new economies endangered bloom fast, go down fast
Ireland, Iceland, Latvia

world wide effect on society global financial crisis

real estate prices USA 2006>







phase 1.2 of the problem handling process

extending the **mental idea** by reading thinking and discussing

2006 USA:

poor people huge mortgage -> increasing mortgage ___>
lose jobs->, return house to the bank

what kind of problem is it?

many people involved

many phenomena

huge effect on many aspects of society

unclear situation, uncertain outcome

complex societal problem

phase 1.3 of the problem handling process:

political agenda

is the problem important enough to put it on the political agenda?

problem owner legitimate

who is the legitimate problem owner ?
local government/ G7/G20

facilitator

first neutral experts

then actors/stakeholders/parties

problem handling phase 1.4

step 1.1 **start of the Compram methodology:**

the facilitator invites experts

COMPRAM methodology: activities

step 1.1 knowledge experts

facilitator **invites experts** based on vague idea of the problem

experts **discuss** in 6 meetings the problem

define the problem: by making conceptual model of the problem

report

experts knowledge

communication
economy

law

psychology

healthcare

insurance

politics

unemployment

media affairs

industry

business banks

system banks

poverty

house market

stock market



experts with knowledge different disciplines

economy banks and insurance companies

law : rules, regulations, restriction and steering elements

psychology: emotions: fear and anger, greed gambling opportunity

politics: elections corruption

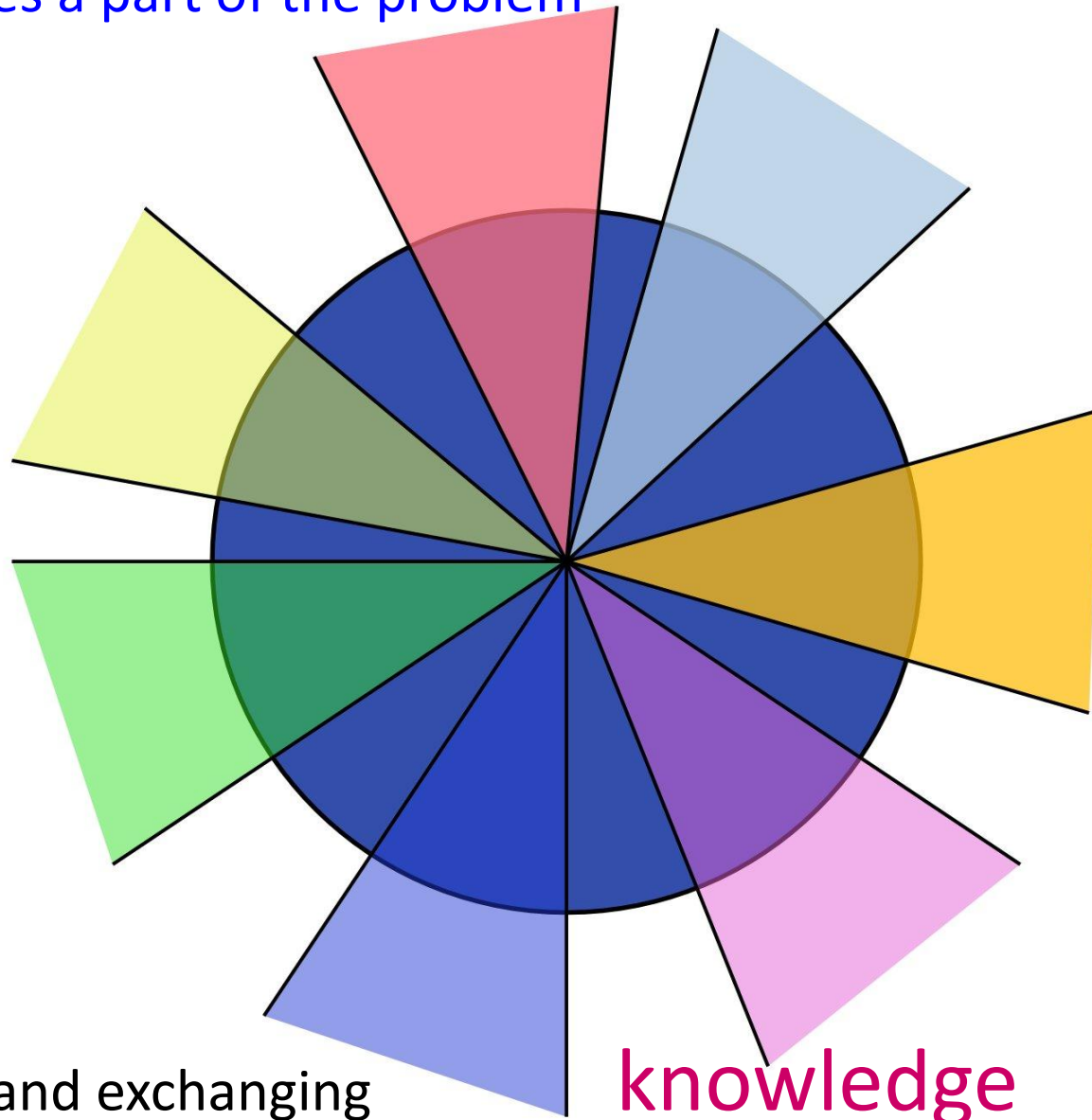
sociology people imitate, poor people, unemployment
extreme richness

marketing persuasion

theories of different disciplines are needed to understand what is going on

each expert sees a part of the problem

experts



some effects

people lost jobs, pension plan decreases, misery

banks give less loans no trust

people complain about high bonus in government supported banks

no sustainable development in the economy

phase 1.5 of the problem handling process

step 1.2 of the Compram method

data gathering, exchanging knowledge

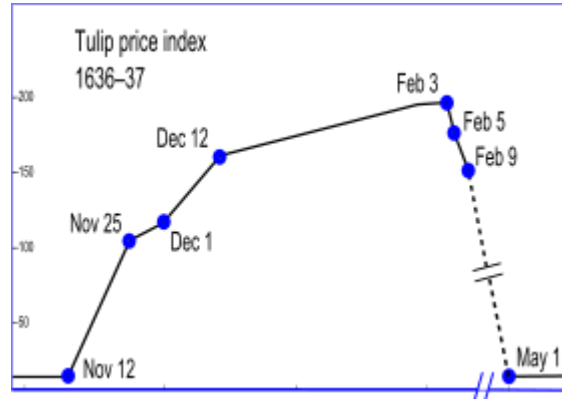
and forming hypotheses by experts

what do we know about the causes and the effects

financial crises in the past

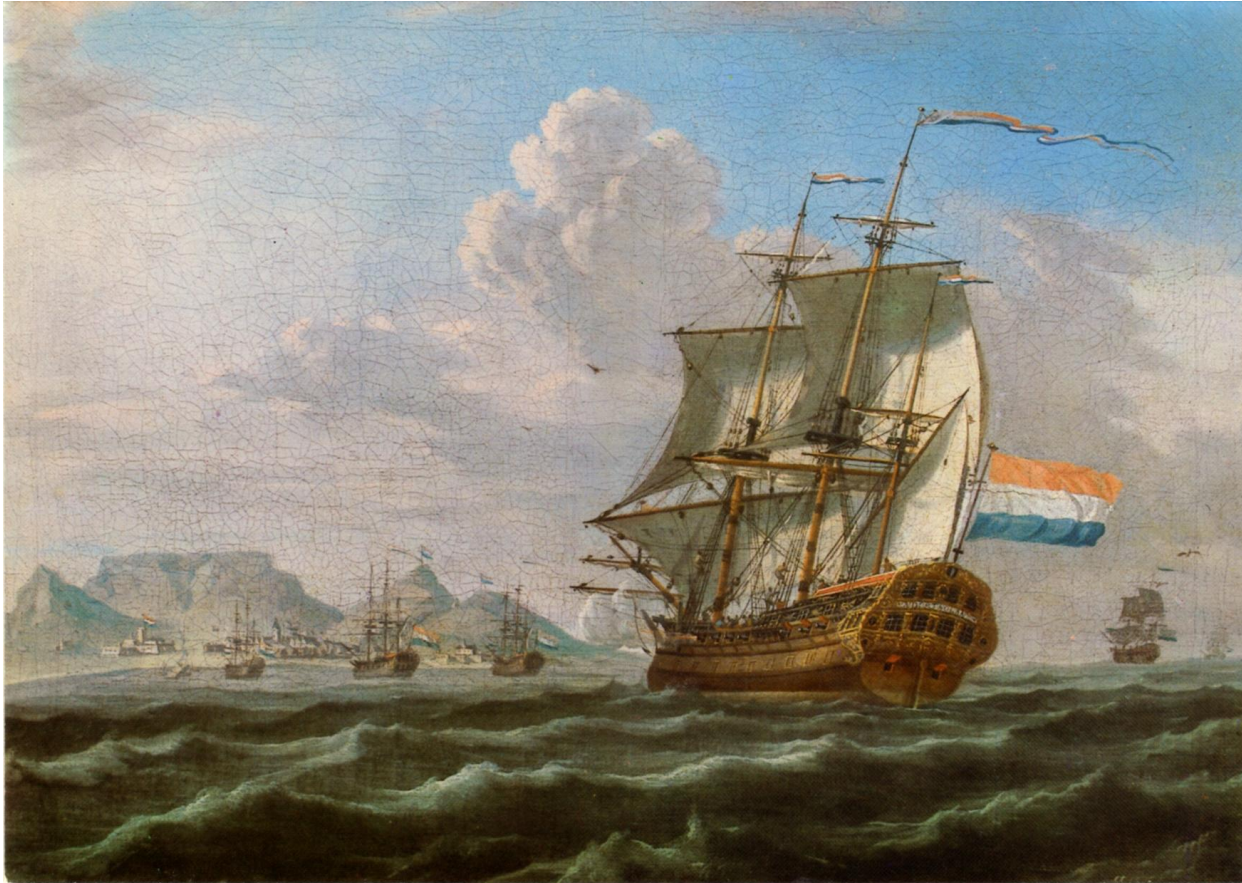
Tulip mania Holland 17th century







naked short selling, Voc The Netherlands





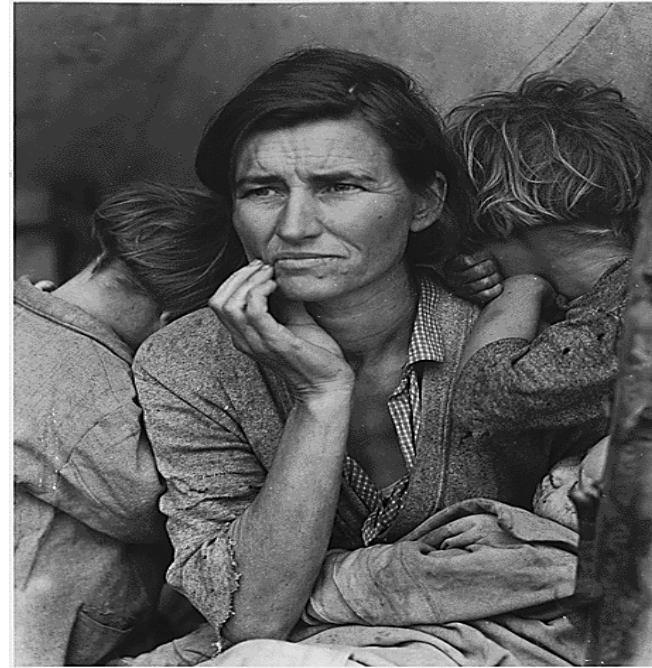
Ponzi game pyramid game

1926 selling parts of Florida

1929 -1939 Great Depression

1939-1945 Second World War

1945-1955 poverty years



start credit crisis

USA

March 2008 Lehmann Brothers bank

September 2008 bankrupt

USA Government: no support business banks

USA Okt 2008 world wide credit crisis



effects

banks go bankrupt

Ice save bank Iceland (Russian owner)

taking over by government

government of The Netherlands

Fortis bank 2008

ABN/Amro Bank

2010 named ABN/Amro Bank



many parties

power

people

government

system bank

business bank

industry

real estate company

stock market

insurance company

formulating the conceptual model

phase 1.6 problem handling process

step 1.3 of the Compram methodology

some causes of credit crisis of 2008:

pyramid game no investment paying interest out of new comers money

Madoff USA and others

bank: debts, collateral bad loans, high bonus

how could this happen?

system / retail bank

bank for the people

loans

savings

mortgage

business bank

advise other firms / financial take over

hedge funds

private equity buy other firms based on 1-10% own money
leave the company (50-100 year old) with debts or
take out the best parts

profit for shareholders
ruthless for employees

provocation of credit crisis

USA 2000-2005 (mid)

system bank mortgage ---.>poor people

system bank → mortgage packages business banks

business banks → packages of mortgage packages bigger banks

bigger banks increase interest → people not able to pay-→

sell house to the bank -→house market declines

collaterate bonds CDO CBO CMO

status of safety uncertain

retail/system banks: collateral bad loans packages,

sold and resold to other banks and insurances

and reinsurances (Schweitzer Rückversicherung)

all banks are interconnected: share and loan from each other

causes of credit crisis

Bush - Thatcher area of
government deregulation: privatized government goods

free market Adam Smith

system/retail banks get the same rights as business banks

take more risks in order to get high bonus and profit

after 2008

economy model Keynes

govenment supports systembanks with money from the tax payer

Fanny Mae / Freddy Mac (mortgage firms) USA

privatize benefits

socialize costs

actors

causes: 1st category

2nd category

3rd category

4th category

bank

employees

controlers/government

poor people

effect: 5th category the world

changing the problem

emp. model handling space scenario intervention implementation evaluation

2.1

2.2

2.3

2.4

2.5

2.6

from conceptual model to empirical model

discussing the handling space

suggesting scenario's

suggestion interventions

discussing implementation

evaluating changes

phase 2.1 empirical model of the problem and desired goal

step 1.4 of the Compram methodology empirical model by experts

what is the desired goal?

f. i. preventing future the credit crisis
and/or diminishing the effects?

problem handling phase 2.3

step 1.6 of the Compram methodology:

experts discussing scenario's

several scenarios are discussed and selected

problem handling phase 2.4

step 1.7 of the Compram methodology:

experts finding interventions

discussing alternatives

f.i. world wide financial controlling system

small group benefits

whole world is suffering from effect of the credit crisis

need international institute of global money control

punishment: money and prison

why should a few people
be allowed to spoil the world,
to get 90% of the income
and let the rest of the world work for them
and pay the price?

COMPRAM methodology: activities

step 2 actors: power

phase 1.4 - 2.6

facilitator invites based on definition of the problem the actor groups

each actor group **discuss** (parallel) in 6 meetings

model with **7-layer model**

define the problem, desired goals, objections, support

report



Complex problem handling methodology

DeTombe

theory 3



basic elements

principles

persons

phases

methods

tools

concepts

steps

activities

COMPRAM methodology: basic elements

complex societal problems have a

knowledge, power and emotion

element

COMPRAM methodology: principles

handling complex societal problems

first define the problem with experts knowledge

then change the problem with all actors power

take care of emotions in impact and in the process

handling is a group process

COMPRAM methodology: persons

initiator: problem owner

process support: facilitator

content knowledge: experts

power: actors

COMPRAM methodology: persons

problem owner:

legitimate: accepted and the power to implement changes

COMPRAM methodology: persons

facilitator

task: organizing + guiding the process

need: methodological knowledge
ethics

has: neutral power
some content knowledge

must be: accepted as a process guide

COMPRAM methodology: persons

experts

have : each knowledge of a part of the problem

must be: neutral towards a solution

COMPRAM methodology: persons

actors/ stakeholders/ parties

all actors involved in the problem

have: their own view, own goals, own hidden agenda's

different power

are: victim and beneficial and actors needed for changing

COMPRAM methodology: concepts

handlingspace

level

Constrains

theory 4

COMPRAM methodology: concepts

handling space constraints:

political

financial

physical

psychological

ethical

time

COMPRAM methodology: concepts

handling space level

on which level can found

first level: current situation

second level: change the environment

third level: world wide changes

fourth level: imaginary

COMPRAM methodology: concepts

handling space level

on which level can be decided?

on which level can be changes be implemented?

local, state, federal state, continent, worldwide

credit crisis the **third level of handling space**

world wide changes

characteristics of the COMPRAM methodology

theory 5





general methodological approach

for all kinds of complex societal issues

Compram: **C**omplex societal **p**roblem handling **m**ethodology

DeTombe 1994-2012>

COMPRAM

efficient democratic transparent

structured + transparent +integrated way of problem handling

COMPRAM

initiated by problem owner

guided by facilitator

performed by teams of experts and groups of actors

for handling complex societal problems is needed:

a legitimate problem owner

who has the power to implement the changes

all the parties involved in the problem

COMPRAM methodology gives an answer to:

- what are causes
- what are the effects
- what do we know
- who and what is involved and in what way
- what do the actors want
- how is the power divided
- which emotions are going on
- what interests are to be gained or to be lost

special aspects **COMPRAM methodology**

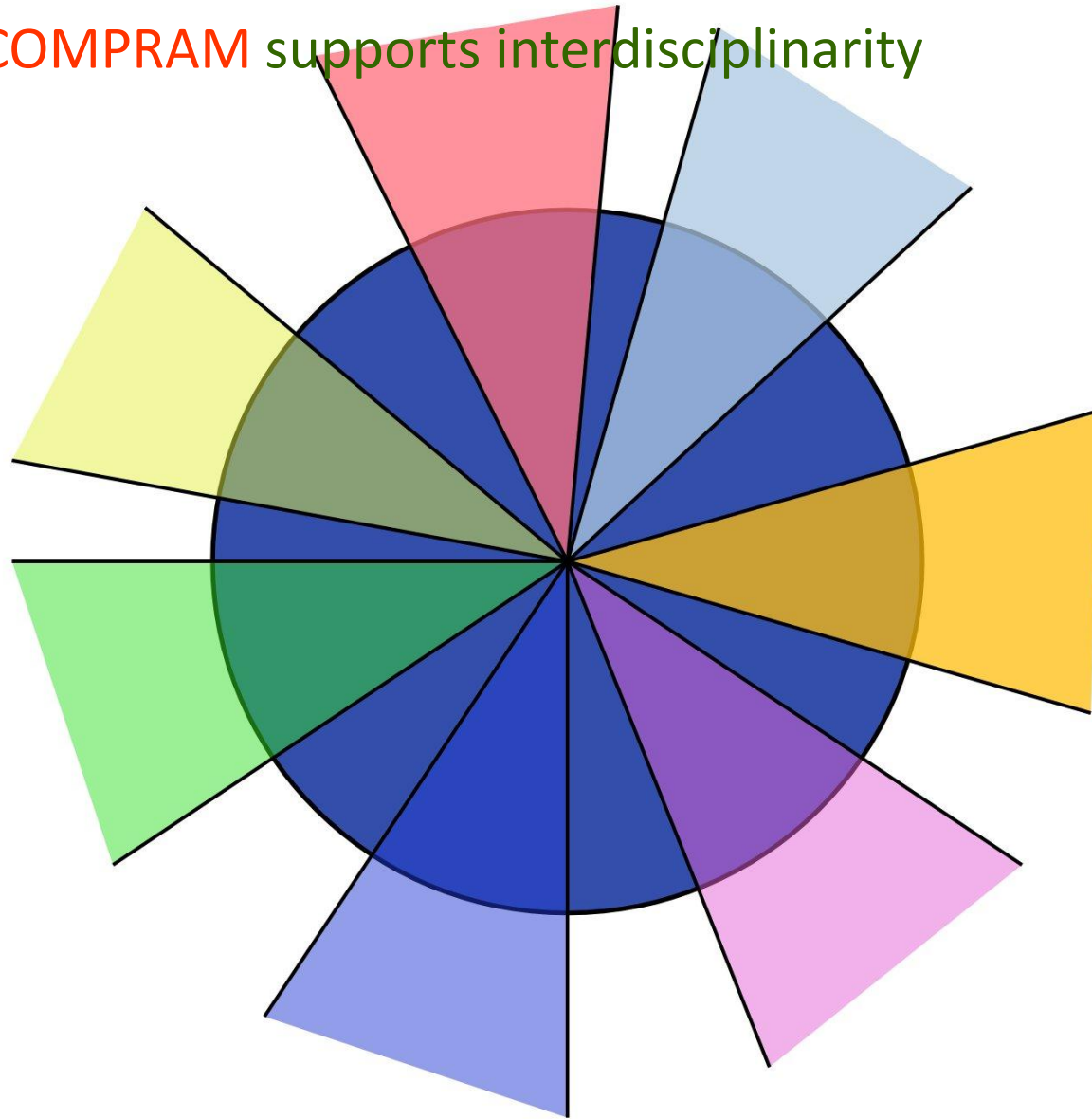
defining the problem before changing

 this means often 'redefining' the problem

analyzing the problem first with 'neutral' experts

including actors in an early phase this avoids problems
 later in the process

COMPRAM supports interdisciplinarity



COMPRAM is a framework methodology:

uses a selection of all kinds of method and tools:

own methods

+

selects existing quantitative and qualitative tools and methods

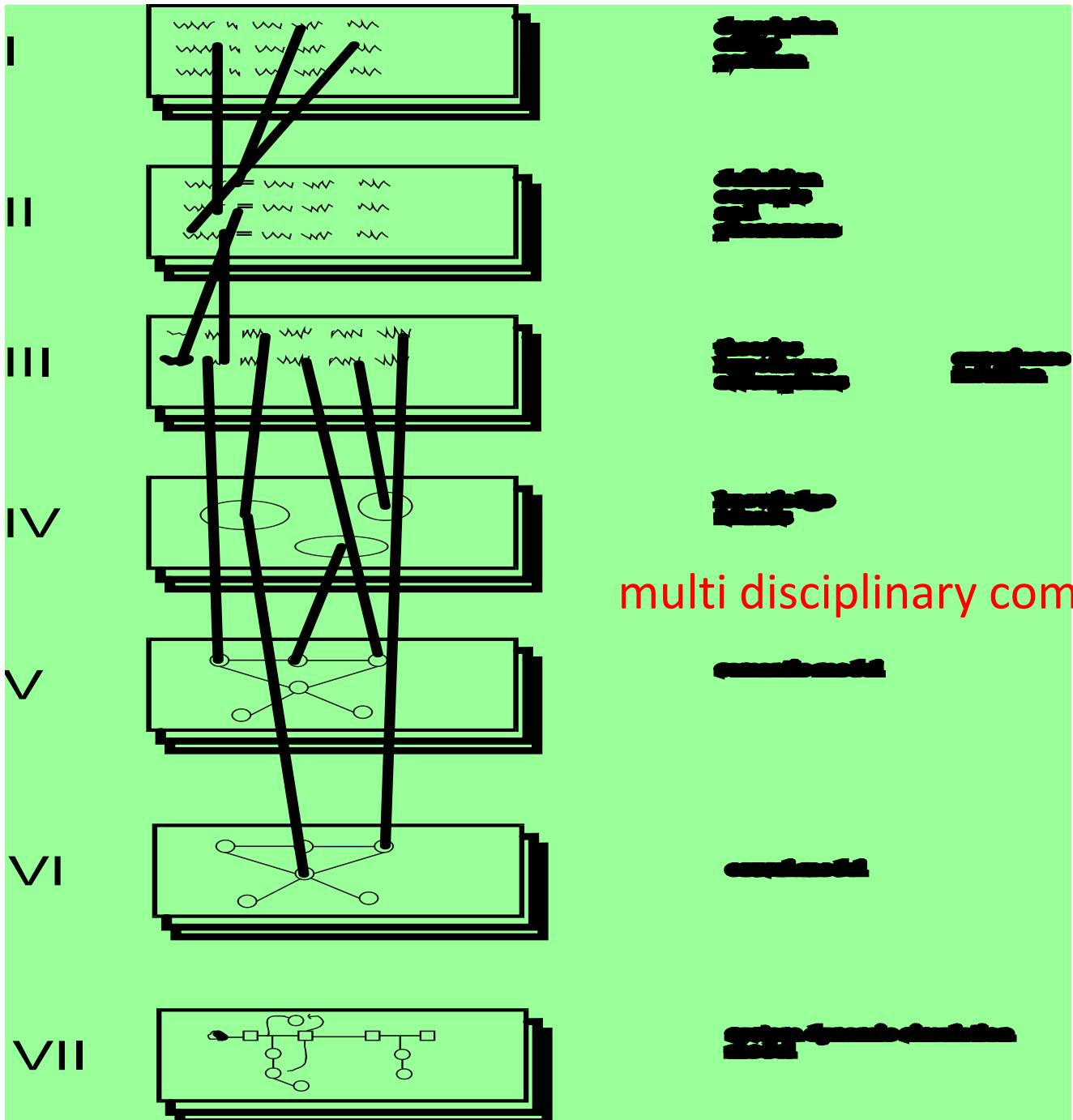
COMPRAM has a multi-actor approach

all major actors included in an early state of the process

democratic and transparent

facilitator is highly skilled in the effect of methods

selects tools and methods that are appropriate



COMPRAM

The seven layer communication model
DeTombe (1994)

multi disciplinary communication

COMPRAM methodology

combining knowledge from different domains and disciplines

dealing with actors with different views different power different emotion

dealing with uncertainty in the process and in the outcome

COMPRAM methodology

based on **theoretical ideas** from

social sciences: methodology, (cognitive)
psychology, sociology

operational research

computer science, artificial intelligence, system theory

chaos theory, socio-cybernetics

mathematics and philosophy

+

real life problems

COMPRAM includes all kind of methods

what kind of method is used depends on

phase in the handling process

kind of problem

people involved in the handling process

problem owner

actors

cultural environment

time + money available

skills of the facilitator

COMPRAM

includes all kind of methods

gathering data: reading, observation methods, interview techniques

analyze data : SPSS, system dynamic simulation models

prediction: scenario's, gaming

COMPRAM includes all kind of methods

decision support methods: hard and soft

operational research methods

MCDA, SODA, SSM, Strategic choice method

communication methods:

group decision support techniques, lectures,

group guidance techniques

Group Decision Support Room



Group Decision Support Room

a special tool in the COMPRAM methodology

theory 6

Group Decision Support Room 1

powerful tool

however

only if it is very carefully prepared

danger of manipulation or too shallow decisions

Group Decision Support 2

activities with GDR

knowledge acquisition: new ideas

brainstorming phase

decision making: selecting phase

voting phase

commitment

Group Decision Support 3

knowledge acquisition: new ideas
brainstorming phase

knowledge:
existing knowledge:
reading, talking, discussing, lectures, papers,
books, data analyses

Group Decision Support 4

new knowledge:

observation, participant observation,
interviews from in depths a few persons to large surveys
individual to groups interviews
interviews with interactions: Delphi research

brainstorming yellow stickers

group decision support combination of :

brainstorming yellow stickers
Delphi research
meeting

Group Decision Support Room 5

dis/ advantages of using a GDR

+anonymous + to avoid group think

+ give more equal changes (then in meeting)

conditions: good for one person one opinion

- cuts out expertise and experience

need special expertise: change then

+fast + if prepared well

- if not prepared well

Group Decision Support 6

dis/ advantages of using a GDR

+parallel input

not forgetting own ideas and avoiding group think by covering the first results from each other

- blind spots can be more avoided in this way

+data kept +manipulation is more difficult

+ fast interaction (delphi takes 3 months): handle with care

+ direct report even after one question

how are complex societal problems
handled in real life?

theory 7

how are complex societal problems handled in real life? 1

- not carefully defined
- jump to conclusion
- start interventions directly

this means:

often handling the wrong the problem
or only effects handled

result: lose much money and unnecessary suffering

how are complex societal problems handled? 2

powerful actors push the 'solution' into their desired direction

the government often more concerned about the next elections
then really handling the problem optimal: short term view

often the less powerful parties are not taken into account

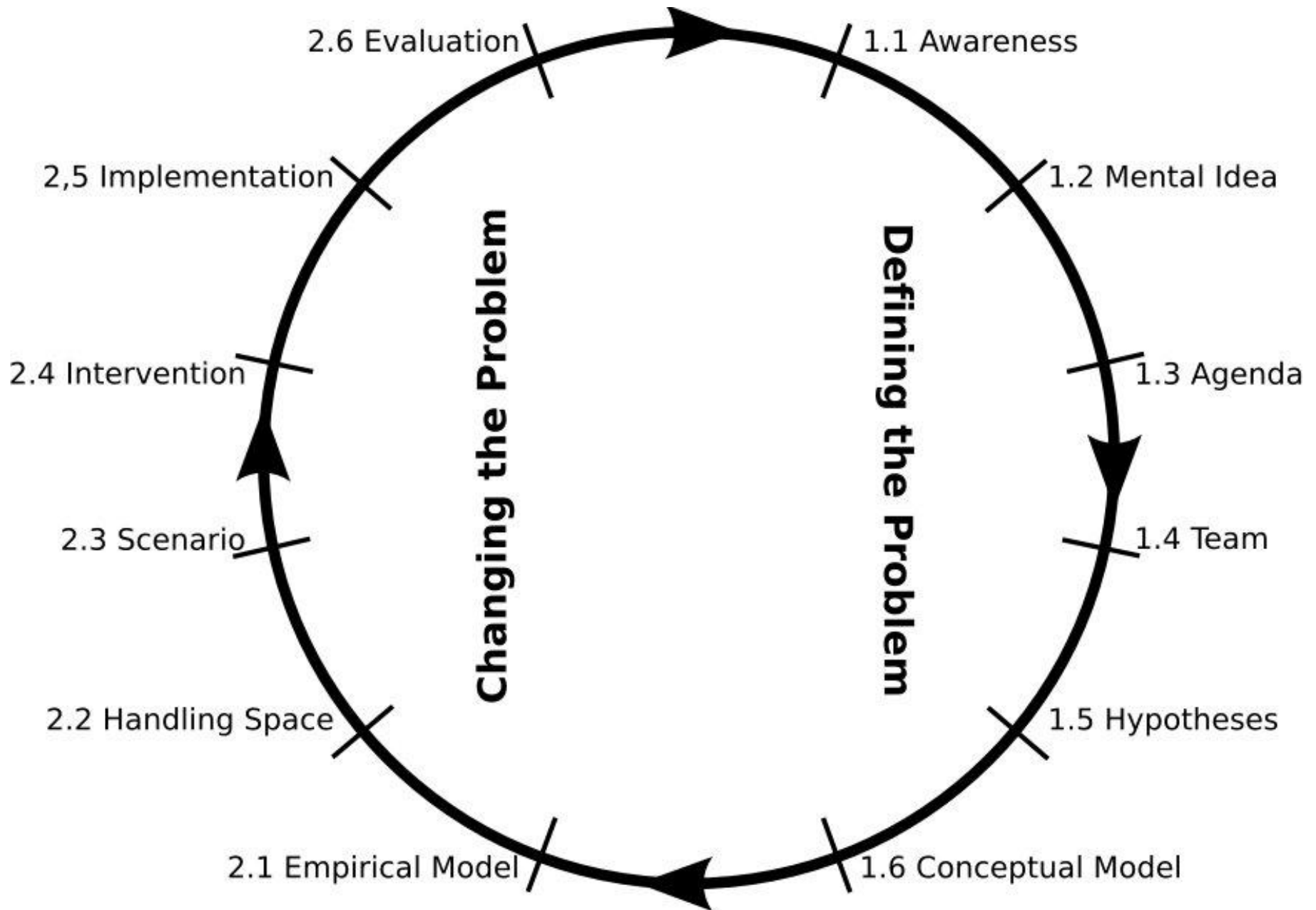
phases of the problem handling process
from
awareness to evaluation interventions

defining the problem

awareness	mental idea	agenda	team	hypotheses	conc.model
<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>1.5</u>	<u>1.6</u>

changing the problem

emp. model	handling space	scenario	intervention	implementation	evaluation
<u>2.1</u>	<u>2.2</u>	<u>2.3</u>	<u>2.4</u>	<u>2.5</u>	<u>2.6</u>



The first sub-cycle of the problem handling process: defining the problem

- phase 1.1 aware forming a (vague) mental idea
- phase 1.2 hearing, thinking,
reading, talking and asking questions
- phase 1.3 agenda and deciding to handle the problem
- phase 1.4 team and analyze the problem
- phase 1.5 gathering data, exchange knowledge
and forming hypotheses
- phase 1.6 formulating the conceptual model

in practice and universities most attention go to:

decision making

phase 2.3: constructing and evaluating scenarios

phase 2.4: suggesting interventions

decision support

decision making

logistics

multi criteria decision analysis

scenario making

why is it so difficult to handle complex societal problems ?

theory 8

why is it so difficult to handle complex societal problems ?

problem it self is very complicated

people who handle have often different goals

methods used not adequate enough

complex real life issues: **problem (1)**

many people

many countries

many organizations

much money

many domains involved

large impact

complex real life issues: **problem (2)**

changes: unpredictable effect of the feedback loops
(chaos theory)

many phenomena + complicated and not clearly intertwined

complex real life issues: **problem (3)**

knowledge from different fields is needed

the knowledge there is, is divided over different fields and persons

knowledge is partly available

white spots

many disciplines

data is in contradiction, missing, uncertain

complex real life issues: **problem (4)**

the problem is undefined, vague defined, wrong defined

the way the problem is defined , the problem will be handled:
HIV/AIDS longtime seen as a healthcare problem in stead of a
complex societal problem

uncertain when started and when ended

often 'sudden' situation

difficult to get grip on, to handle, to 'solve'
change during its development

solutions not known not possible

complex real life issues: people (1)

the problem owner (the one who should handle the problem)

government:

short term view

own interest

next election

organizations: ceo's sometimes

too specialized

lack of overview

own benefit

all: hidden agenda's

complex real life issues: people (2)

the actors

many (changing) actors own views, goals,
emotion, power, knowledge,
hidden agenda's

group think (negative-Pigs bay invasion)

collective blind spots

communication is difficult

complex real life issues: people (3)

the actors

each actor has his/her own definition of the problem

wants to push the 'solution' towards his/her own goals

methods

the handling process starts not at the beginning

but somewhere in the middle: jump to solutions

using not adequate methods

conclusion

handling a complex societal problems

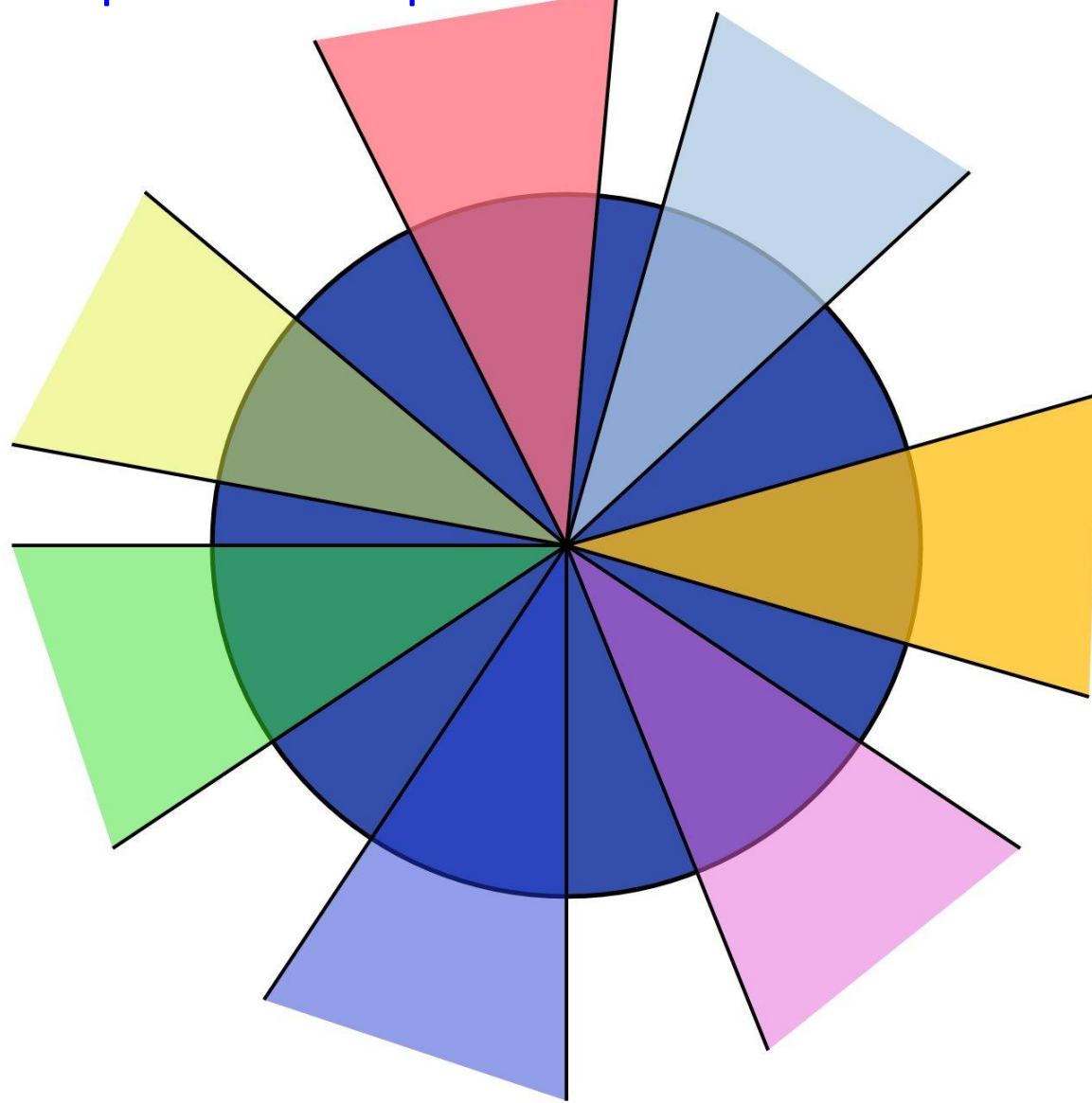
needs methods and tools from the

field of

Societal Complexity

the **COMPRAM** methodology

each expert sees a piece of the problem



ideas of the COMPRAM Method applied in:

Japan, China,

Europe : Tjernobyl

South America

South Africa

to all kinds of problems

ideas of the COMPRAM Method applied to:

Sustainable Development

Future- Spatial Economy

Risk-Disasters

Epidemiological diseases: Aids/HIV

Training

the COMPRAM method and selective tools & theories:

Simulation- System Dynamics

Socio-Cybernetics

Chaos Theory

Validation

Gaming

Chaos Theory

Group Decision Support Systems (GDSS)

Expert Systems

International Research Groups of

Methodology of Societal Complexity

keep yourself informed

website:

www.complexitycourse.org/doriendetombe

International Research Groups of Methodology of Societal Complexity

International Research Society on Methodology of Societal Complexity
DeTombe (chair)

Continents

Africa Research Society on Methodology of Societal Complexity

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The Irish research group Decision Modeling, Management &
Philosophy

Research group Methodology for Complex Societal Problems of the
Slovenia Institute of Climate Change (SEM) Slovenia

Africa

South Africa Research Society on Methodology of Societal
Complexity

international scientific journal of
methods and models of complexity

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published on internet by SISWO, university of amsterdam

<http://www.fss.uu.nl/ms/cvd/isj>

ISSN- 0928-3137

internet: including video

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Conferences in the field of methodology of societal complexity

Euro Working Group on Methodology for Complex Societal Problems / issues:

1994

ISAGA conference Ann Arbor, Michigan, USA, July 1994

The First International Conference on Methods and Tools
for Analyzing Complex Societal Problems,
Delft University of Technology,
The Netherlands, November 1994

1995

EURO XIV, 14th European Conference on
Operational Research, 1995- 20th Anniversary of Euro
Jerusalem, Israel, July 1995

1996

Second International Conference on
Methods and Tools for Analyzing Complex
Societal Problems, Munich University of Technology
Germany, organized in conjunction with
WACRA-Europe Society on
Case Method Research, June 1996

IFORS '96 conference,
Vancouver, Canada, July 1996

1997

ISAGA conference University of Tilburg
The Netherlands, July 1997

EURO/INFORMS conference Barcelona, Spain
July 1997

WACRA-Europe conference, Madrid, Spain September 1997

1998

EURO XVI Operational Research. Brussels,
Euro Working Group 21 Methodology for Analyzing
Societal Problems, July 1998

14th International Sociology Conference
Montreal, Canada, July 1998

Simulation in Industry Conference
Nottingham, UK, October 1998

1999

IFORS'99, Beijing, Euro Working Group 21 Methodology
for Handling Societal Problems August 1999

2000

E U R O XVII, E U R O 2000,
Budapest, Hungary, July 16-19, 2000

5th International Conference on
Social Science Methodology,
Cologne, October 3 - 6, 2000 Germany

2001

EURO XVII, E U R O 2001

Rotterdam, The Netherlands, July 9-11, 2001

Euro Sim 2001

Delft, The Netherlands, June 27-30, 2001

2002

12th Mini EURO Conference, Free University
Brussels, Belgium, Europe 2-5 April 2002

IFORS 2002: Edinburgh, UK, 6-11 July 2003

2003

HCP'2003: Human Centred Processes Luxembourg, May 5-7 2003 Distributed Decision Making And Man-Machine Cooperation

Joint Euro / Informs Conference Istanbul, Turkey July 6-10, 2003 Organizing Committee Chair, Prof. Gulay Barbarosoglu

2004

May Connecticut, Central Connecticut State University USA

August 17-20 2004 RC33 Sixth Intern. Conference on Social Science Methodology, Amsterdam , The Netherlands, Europe

October Chinese Academy of Sciences Beijing China

November Purchase, Purchase, State University of New York, New York, USA,

November East Connecticut State University USA Connecticut

November 19-21 Boston USA, Decision Support Conference, DSI

November University of UQuam Montreal Canada

2005

March Ankara

Middle East Technical University METU/ODTU Turkey

March Istanbul University of Marmara

Istanbul Turkey

November 2005 The Netherlands Methodology day

NOSMO

2006 (1)

March Ankara

Middle East Technical University METU/ODTU Turkey

March ankara healthcare conference Tobias University Ankara

July 2 - 5 2006 EURO XXI in Iceland

21st European Conference on Operational Research

[our info: Complex Societal Issues Iceland](#)

July 23-26 2006 XVI ISA World Congress of Sociology Durban
South-Africa

Research Committee on Logic and Methodology RC33

[our info: Complex Societal Issues Durban](#)

2006 (2)

September CIGSUD Conference, University of Romerio
Vilnius Lithuania, <http://www.mii.lt/CIGSUD> .

November New York State University Stony Brook

agenda 2007 (1)

Research agenda conferences and meetings of the International Research Society on Methodology of Societal Complexity

March 2007

Methodology day NOSMO

date : 9 March 2007

time : 10 am - 5 pm

location : Uithof, Educatorium Alpha, University of Utrecht The Netherlands, Europe

costs : conference fee 35 euro

deadline : abstract 15th February 2007

[our info: complex societal problems nosmo dag](#)

Website NOSMO <http://www.nosmo.nl>

June 8 2007

METU, Ankara , Turkey organized by Prof. dr. W. Weber

*“Workshop on Sustainable Living
at Turkish Rural Countryside”*

agenda 2007 (2)

June 18 2007

video conferencing

METU University Ankara Turkey-Amsterdam University, The Netherlands

discussion: balabanproject Euro XXII Prague

July 8-11 2007

The 22nd European Conference on Operational Research, EURO XXII,

Prague, 2007, Czech Republic, Europe, July 8-11 2007

general info <http://euro2007.vse.cz>

[Euro Working Group on Methodology of Societal Complexity 2007](http://www.geocities.com/doriendetombe/detombeeuropague2007.html)

<http://www.geocities.com/doriendetombe/detombeeuropague2007.html>

[Global Safety & Sustainable Development & Healthcare Methodology of Complex Societ](#)

Book of abstracts of the participants Euro XXII Prague 2007

agenda 2007 (3)

October 2007

Canada Concordia University

USA, University of Connecticut

USA, New York State University, Stony Brook

December 2007

video conferencing

METU University Ankara Turkey-Amsterdam University, The Netherlands

discussion: balabanproject Euro XXII Prague

agenda 2008 (1)

Research agenda conferences and meetings of the
International Research Society on Methodology of Societal Complexity

Methodology day NOSMO

July 2008 South Africa

The International Conference on Operational Research, IFORS

September 2008

Italy, Naples, RC33, social science methodology

Video conferencing

agenda 2009

Research agenda conferences and meetings of the
International Research Society on Methodology of Societal Complexity

July 2009 **Bonn**

The 23rd European Conference on Operational Research, EURO XXIII
Young researchers

agenda 2010

Research agenda conferences and meetings of the
International Research Society on Methodology of Societal
Complexity

July 2010 Lisbon

The 24 European Conference on Operational Research, EURO
XXiV

September 2010 Munich
Operational Research

agenda 2012

Research agenda conferences and meetings of
the
International Research Society on Methodology
of Societal Complexity

July 2012 Vilnius Lithuania

The 25 European Conference on Operational
Research, EURO XXV

July 2012 Australia

Social sciences RC33

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Sustainable Development, Climate Change, Credit Crisis and Global Safety

<http://www.complexitycourse.org/ecoursecomplexityI.html>

The relevance of insights into Societal Complexity

The field of societal complexity reflects and guides policy making of complex societal problems like terrorism, flood, large city problems, agricultural business, flu pandemic, climate change and large (inter) national organizational problems.

Handling complex societal problems needs a special approach. Handling societal problems in an interdisciplinary way has become a must for our society and a challenge for the human and social sciences.

The problems society is confronted with are difficult to handle. There is a growing gap between the complexity of these problems and the human capacity to deal with them. There is a need for better methods and tools, more knowledge and imagination. Scientific knowledge is needed to survive amidst these problems.

Therefore methodology for complex societal problems has become an important field of scientific attention.

Some of the scientific and real life reasons for this special approach are that the problems are seldom defined, change during their development, many actors are involved often with a different view on the problem, with different interests and with different 'solutions' in mind.

It includes knowledge, power and emotion aspects.

Societal reasons for this special approach are the importance of these problems for society, the impact they have on many people, and the large amount of money involved.

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detombe@nosmo.nl

from 1993 yearly 2 international conferences

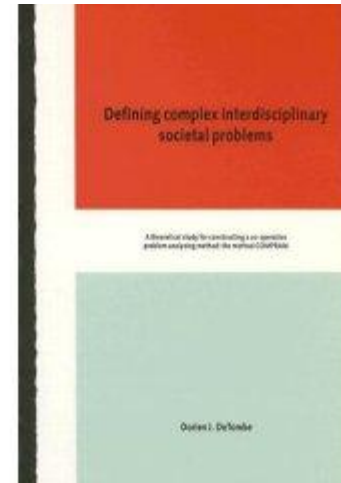
2012

July Lithuania Vilnius Euro conference Operational Research

July Australia Social Sciences RC33

Books/ Journals

Methodology of Handling Complex Societal Problems (1)



DeTombe, D.J. (1994)

Defining complex interdisciplinary societal problems.

A theoretical study for constructing a co-operative problem handling method: the method COMPRAM.

Amsterdam: Thesis Publishers Amsterdam (thesis), 439 pp.

ISBN: 90-5170-302-3

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