Section Policy Analysis
FACULTY OF TECHNOLOGY, POLICY AND MANAGEMENT
TU Delft

Explaining controversies over map visualizations in Impact Assessment

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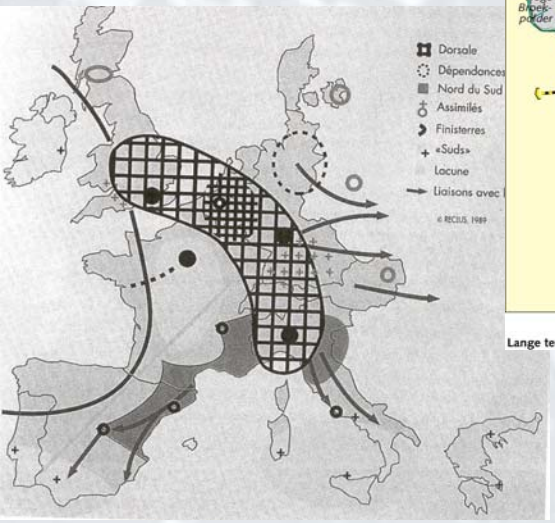
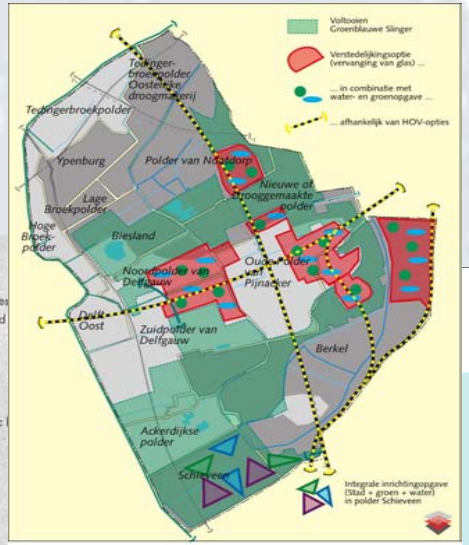
Examples of controversial maps



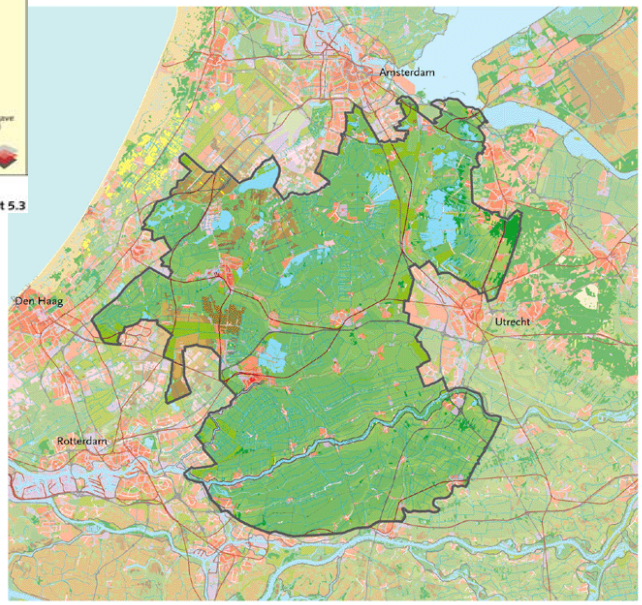
"the Blue Banana"



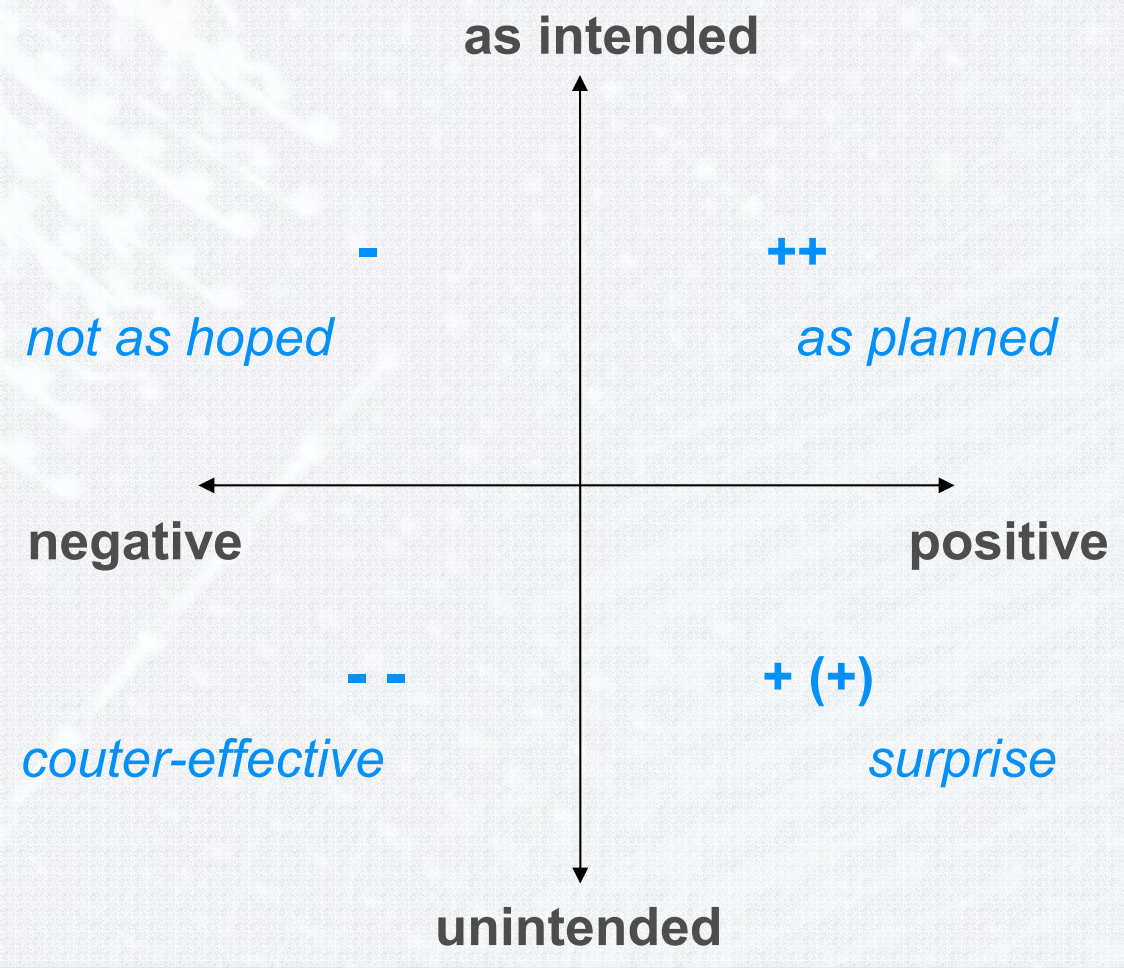
Lange termijn RO-opties per polder Kaart 5.3

options for urban development

"the Green Hea



Effectiveness of map use



- whose perspective: individual/group
- which roles/intentions

Intentions of IA experts with maps

to communicate results

but also:

1. to identify spatial phenomena
2. to articulate and specify spatial issues
3. to clarify spatial relations
4. to synthesize (spatial aspects of) arguments and designs
5. to consolidate findings, views, options and decisions about spatial aspects

Framework

Two assumptions:

- **Individual actors use a map purposefully**
- **In a group of actors, the role of a map is emergent**

Framework

Context (C)

Overall objectives

Problem issues

Phase

Uncertainties

etc.

Map use in a discourse (M)

Use of map:

Intentions

Interaction

Change and exchange of views, values, options

Map Images:

Theme, message

Scale, boundaries, legend

Classification, layout

Justification

Effects (E)

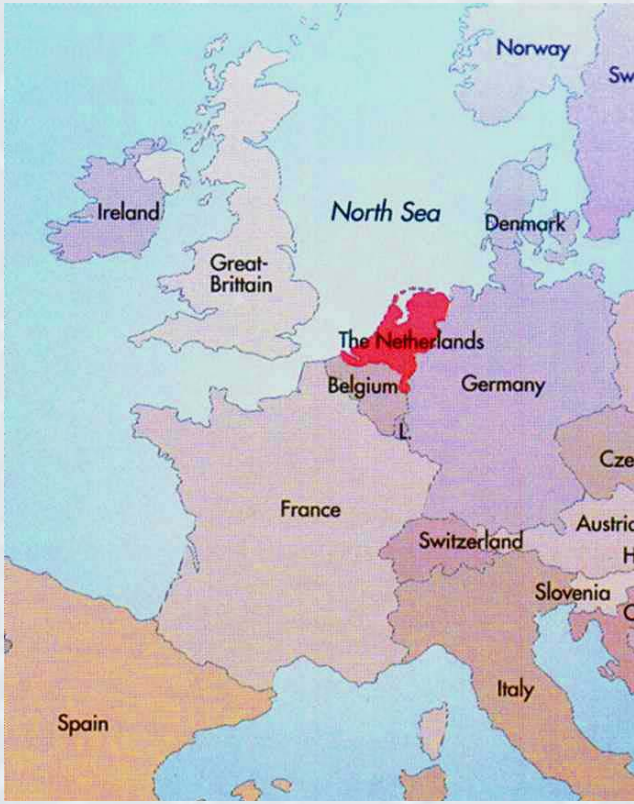
Level 1: Perceived effectiveness of map

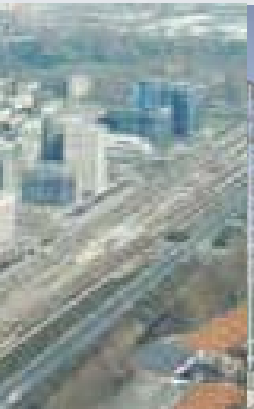
1. Intended function of map is achieved	++
2. Map served unexpected function	+
3. Map did not fulfill function	-
4. Map had unexpected, undesired effect	- -

Level 2: Reconstruction of underlying reasoning mechanisms

Cases - in the Netherlands

- **Surface area: 36,000 km^2**
- **17 million people**
- **Cities: Amsterdam, Rotterdam, and The Hague**
- **Landscape: flat, below sea level, grassland (agricultural), a lot of water and rivers**

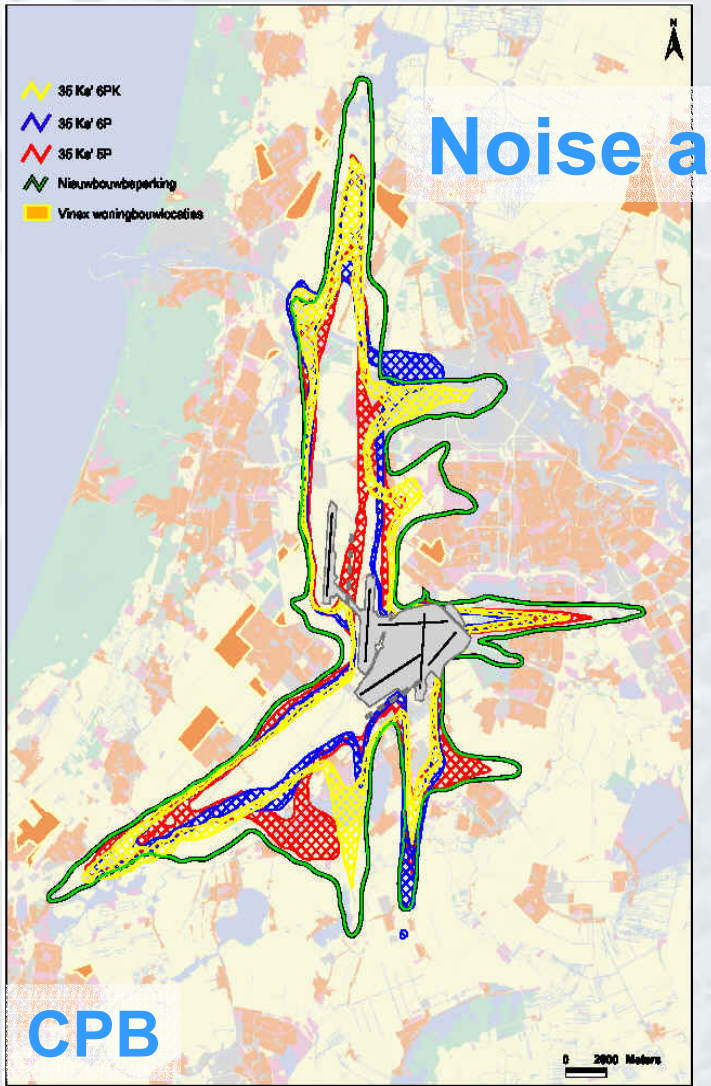




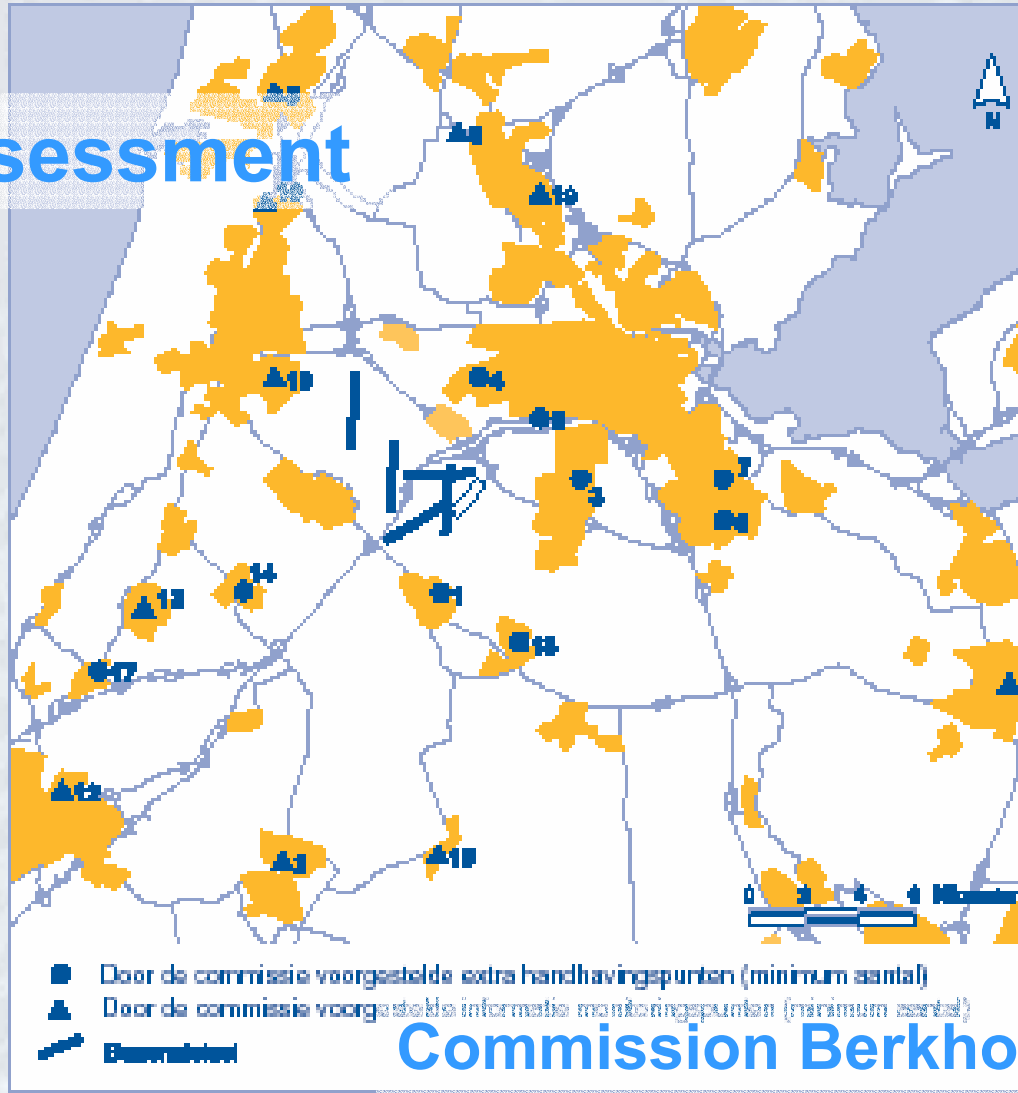


Case Schiphol airport

Noise assessment

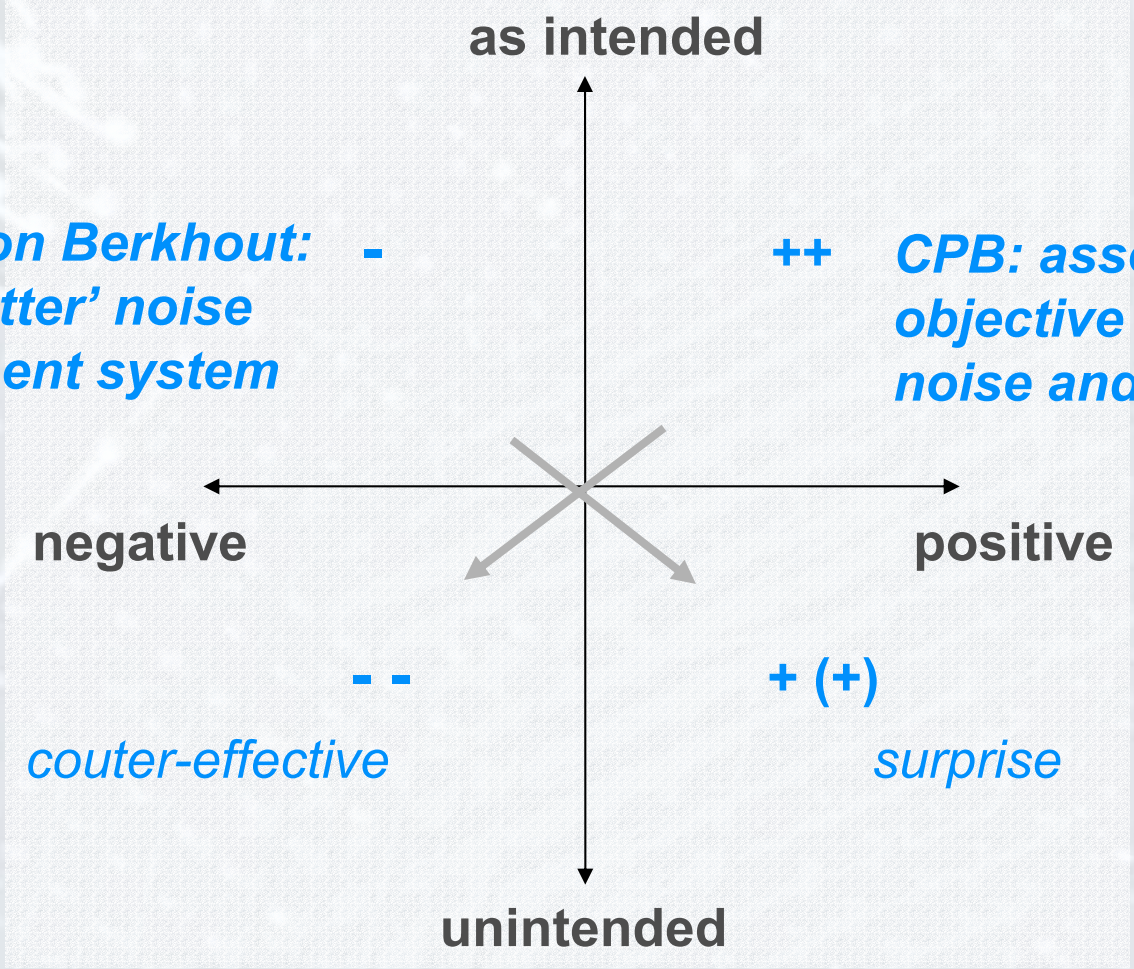


CPB



Commission Berkho

Effectiveness of map use



commission Berkhout: design 'better' noise measurement system

-

++

CPB: assessment supports objective of dis-linking noise and air traffic

- -

couter-effective

+ (+)

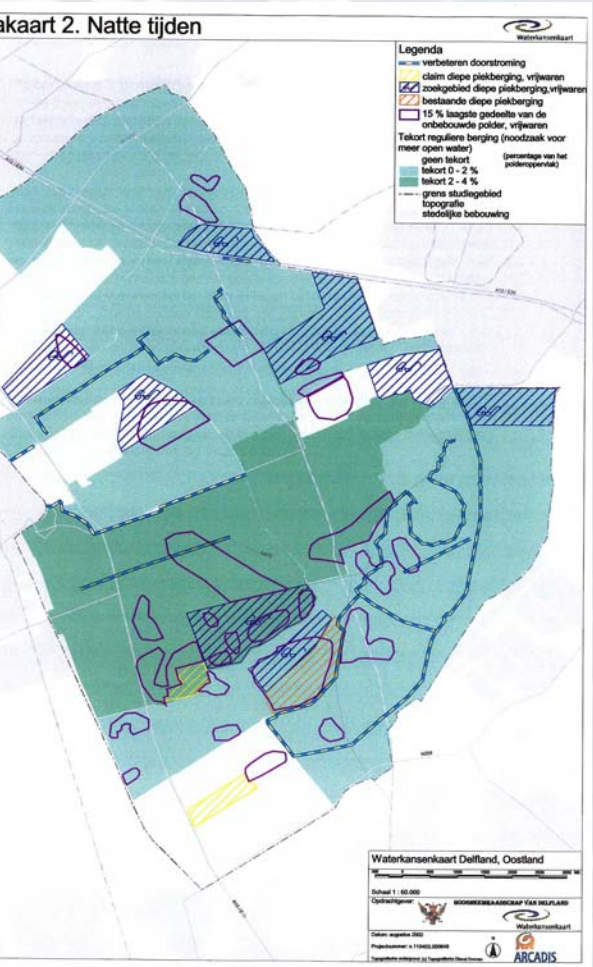
surprise

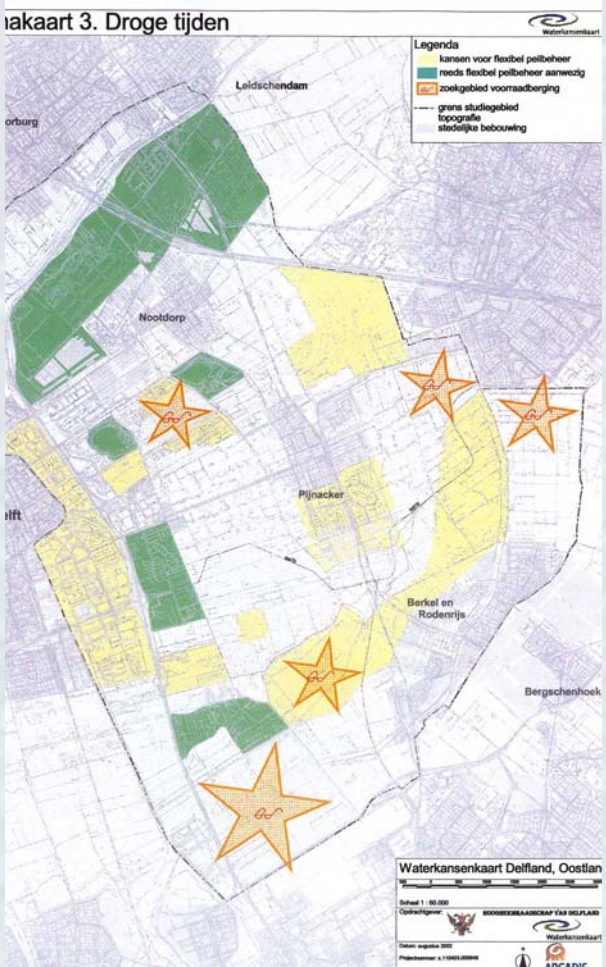
Case Water Opportunity Map

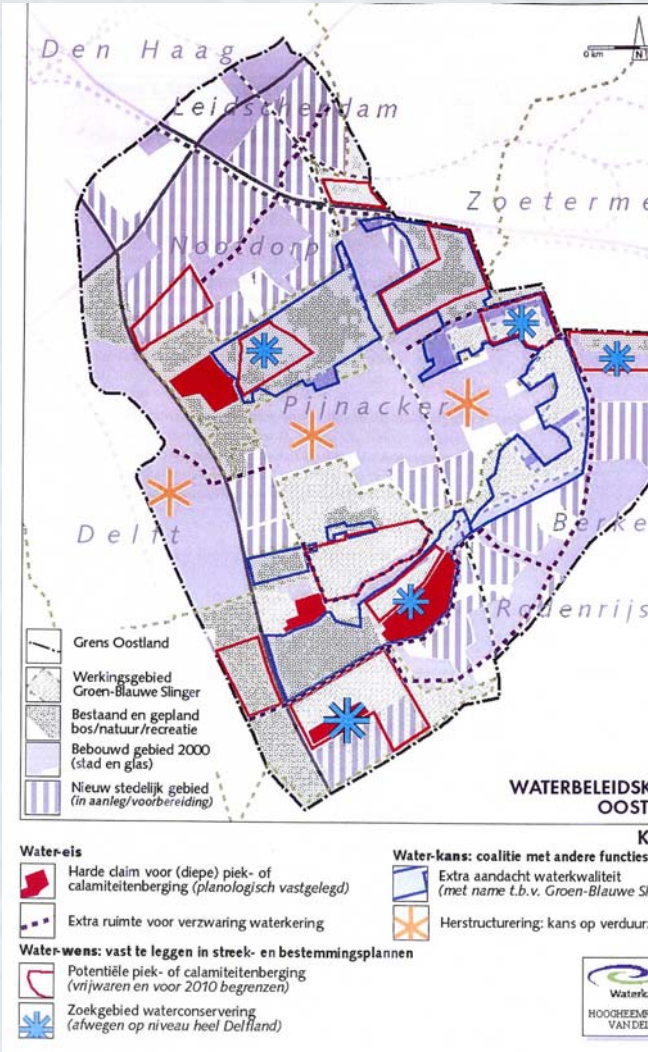
Goals project:

- Influence in spatial planning
- Stimulate communication
- Create support
- Gain insight in priorities
- Develop and propagate policy vision

Calamity polders and water storage basins







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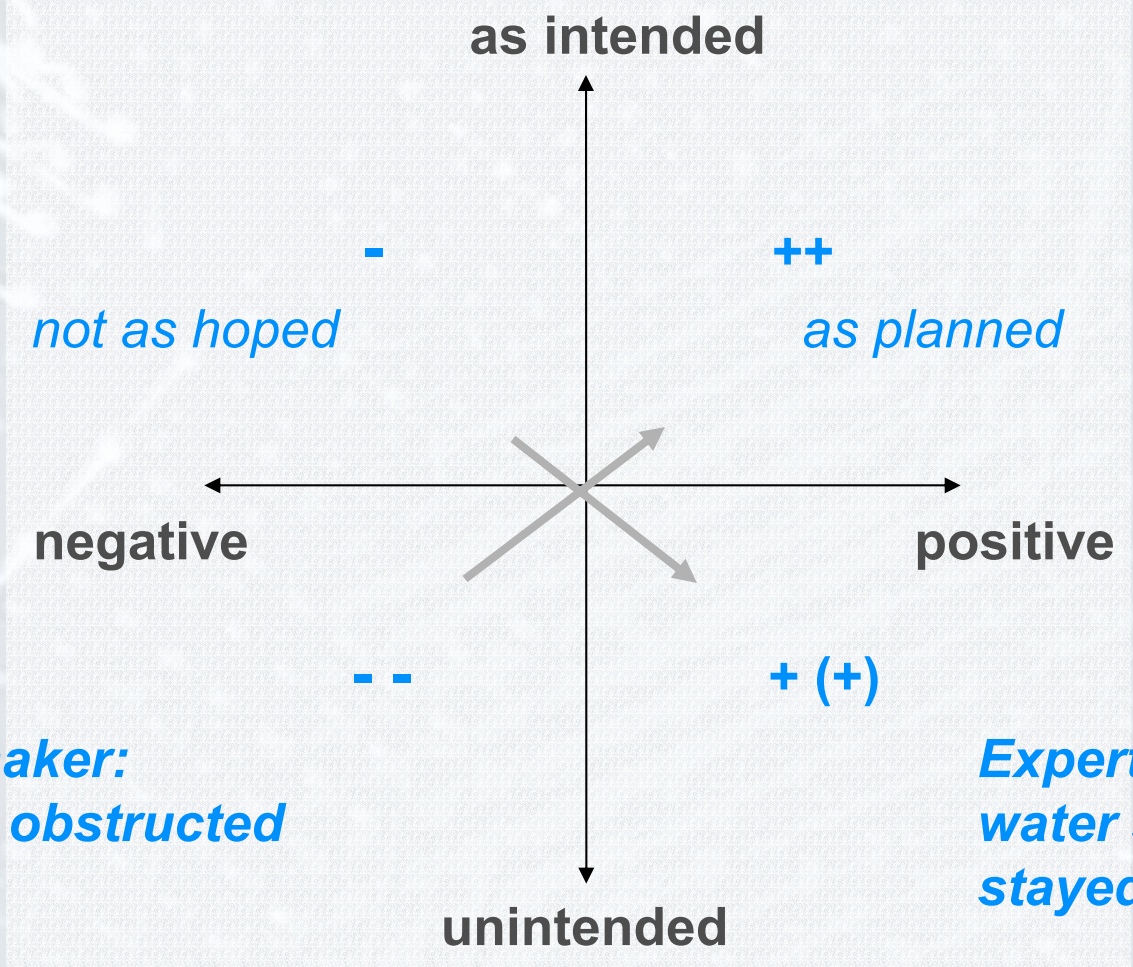
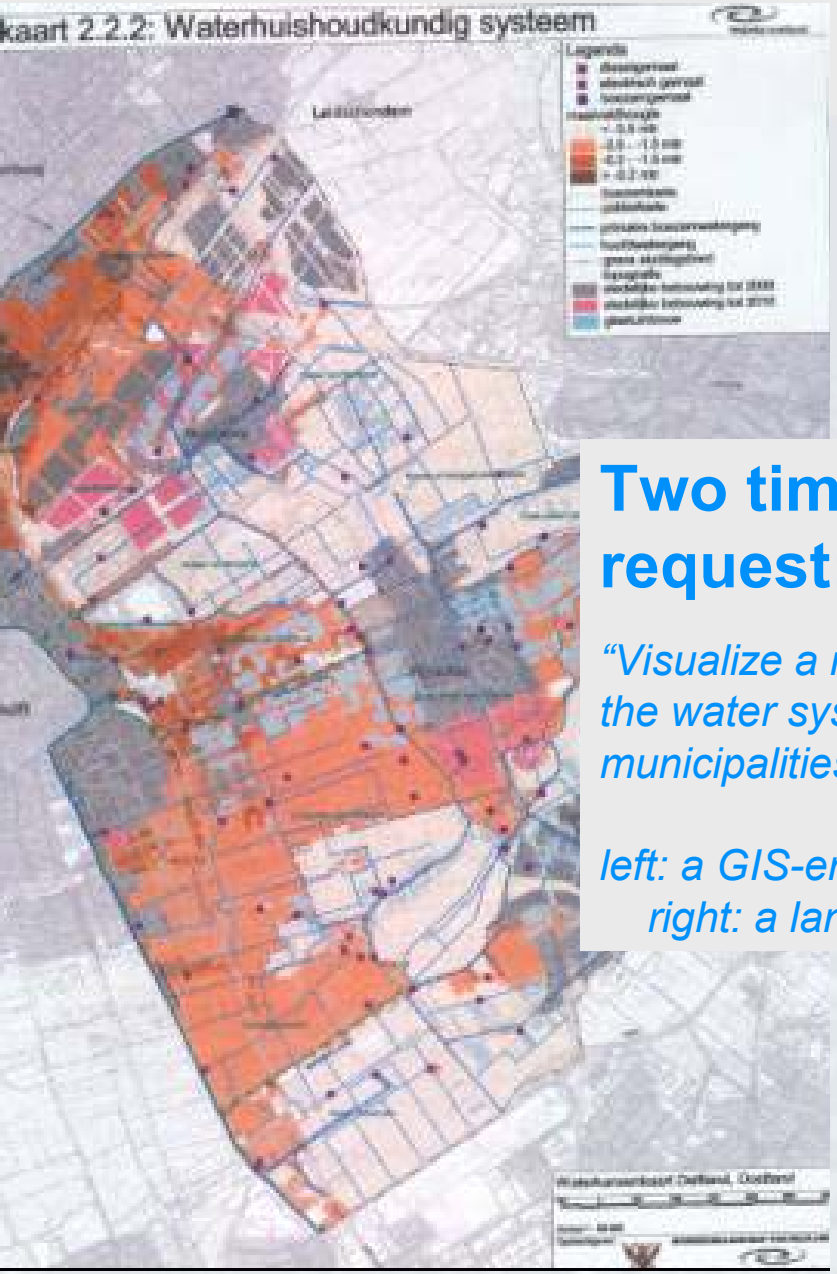


Decision-maker: discussion obstructed process

Expert water board: water storage basins stayed on the map

Dominant styles in map use

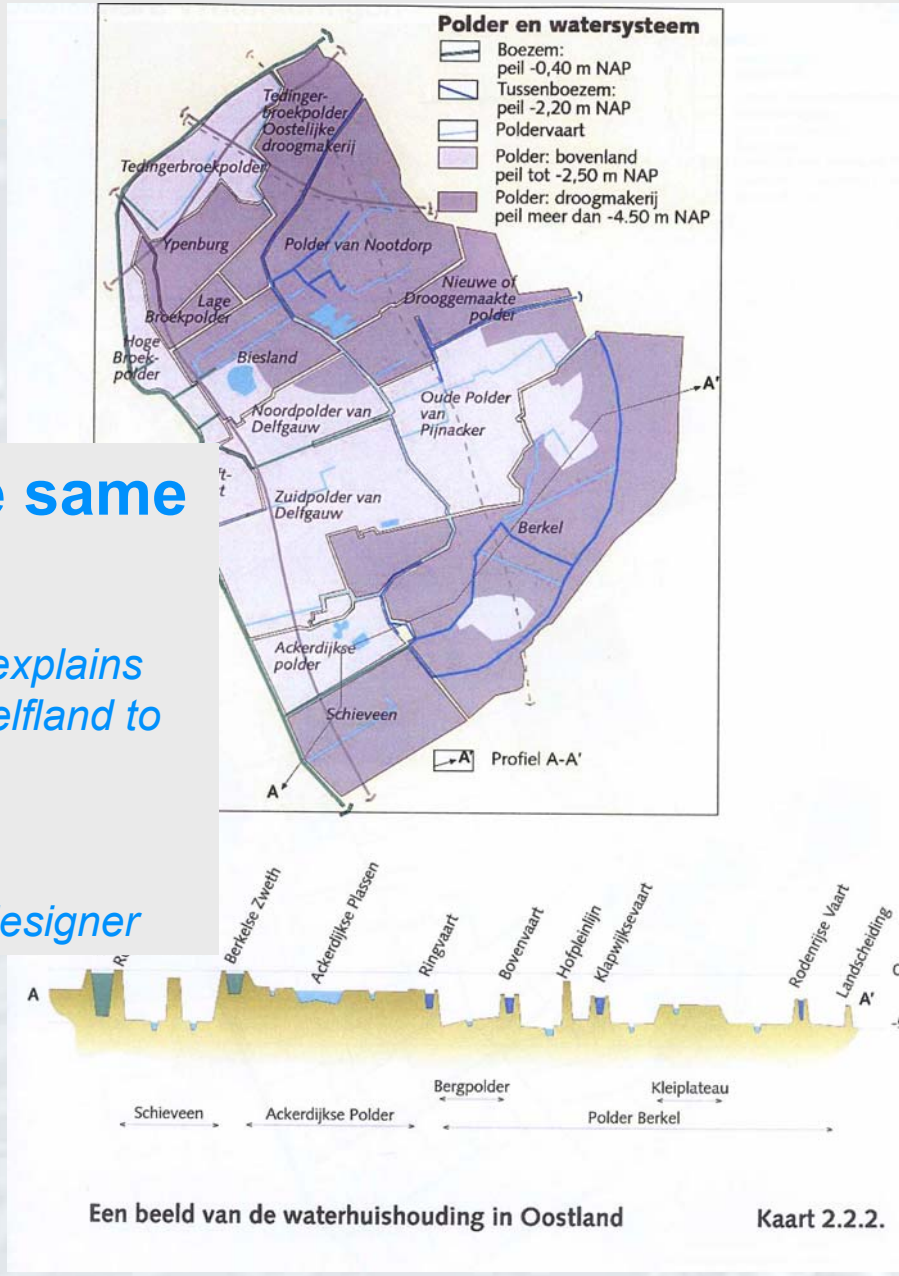
Style	Analysis	Design	Negotiation
Emphasis	Clarify, synthesize	Articulate, Express	Advocate/ mediate,
Focus	Knowledge	Ideas	Decisions
Perceived limitations	Scope, data	Conditions, scope	Timeframe, context



Two times the same request:

"Visualize a map that explains the water system in Delfland to municipalities"

left: a GIS-engineer
right: a landscape designer



Concluding

Maps as argument in case Delfland:

- It were the design principles that were persuasive and concluding:
  - 'safety is more urgent than annoyance, which is more urgent than water quality'
  - 'water should circulate from clean to dirty' and
- Maps were an effective tool in this process to reveal these agreed choices (negotiated knowledge), but not without heavy debate

Lessons: proposing a meta-dialogue

- **Next to active map-making and map use as tool in IA, build i reflective moments in the process**

Meta-discussion on:

- status of maps in policymaking process
- roles of map
- assumptions behind map
- uncertainties in map
- view on the map

*

Meta design and map use

1. Communicate dilemmas and problem dimensions

Dilemmas:

- Spread versus concentrated patterns
- Connecting networks versus breaking other networks
- Quality versus quantity priority
- Long term versus short term priority
- Preserve historically grown situation or create new one

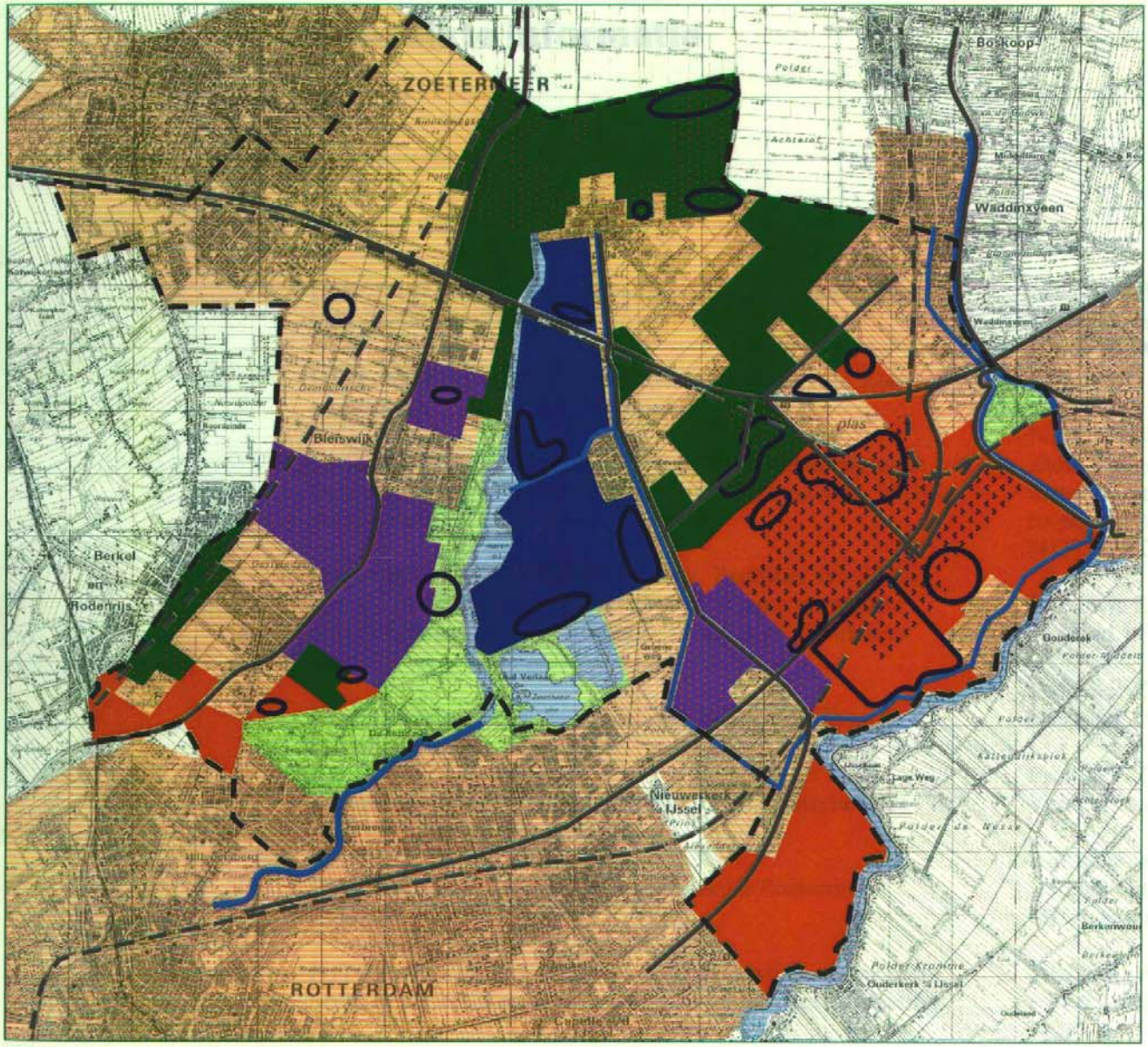
- 'Red versus green' priorities: combined trade-off between urban versus rural and economic versus ecologic interests
- Interests of global versus local scale
- Responsibility and power of choices: institutional centralization or delegation

2. Differentiate hotspots and negotiated knowledge

3. Multiple alternatives and scenarios

-design both context, discourse and map
-design consciously for multiple effects

Example: Distinction between constraint, negotiable objectives and core interests of the mapping author



Hoogheemraadschap van Schieland

Kaart 9

Waterkansen

"Waterclaim" – statement of stake, n
Ruimtereservering gewenst voor: negotiable ("claim")

- Centrale calamiteitenberging
- Decentrale calamiteitenberging

"Wateradvies" – aim, subject to grou
collaboration ("advic

- Kleigebieden zonder beperkingen aan de functiekeuze
- Kleigebieden met beperkingen voor wonen, werken en glastuinbouw
- Veen- en moerige gebieden met beperkingen aan de functiekeuze
- Veen- en moerige gebieden met bijzondere beperking de functiekeuze vanwege potenties voor kritische natte natuur
- Vanwege drooglegging en zettingsgevoeligheid minde niet geschikt voor bestaande/ planologisch gereservee glastuinbouw

criteria on suitability
urban development,
with line of argumen
incorporated in lege

Randvoorwaarden (situatie 2010)

- Bestaand en planologisch vastgesteld gebied voor wo werken en glastuinbouw
- Recreatiegebied
- Water
- Hoofdwegen
- Spoorlijnen
- Grens plangebied

working conditions of t
project ("constraints")

Typology of map functions

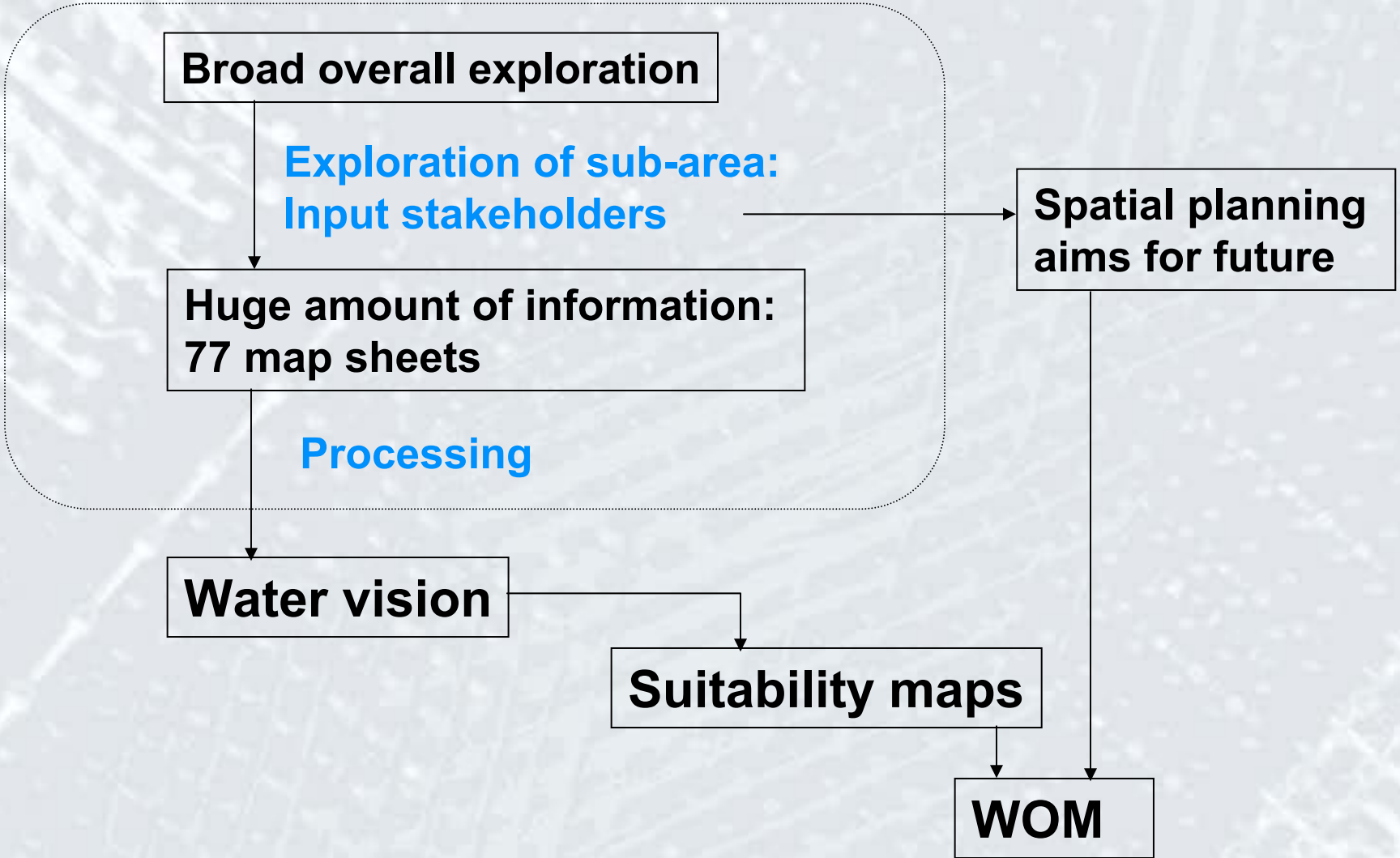
Process

1. Coordinate information
2. Agendize
3. (Re-) frame problem
4. Express spatial claims
5. Persuade, make argument
6. Clarify spatial conflicts
7. Mediate between spatial trade-offs
8. Consolidate choices

Content

9. Analyze problem
10. Synthesize results of spatial analysis
11. Design; visualize spatial patterns
12. Consolidate

Policy process WKK Delfland



efining borders:

% lowest area in a polder'
ly borders of 15% lowest area remain as
ght contours

What is a map? – definition

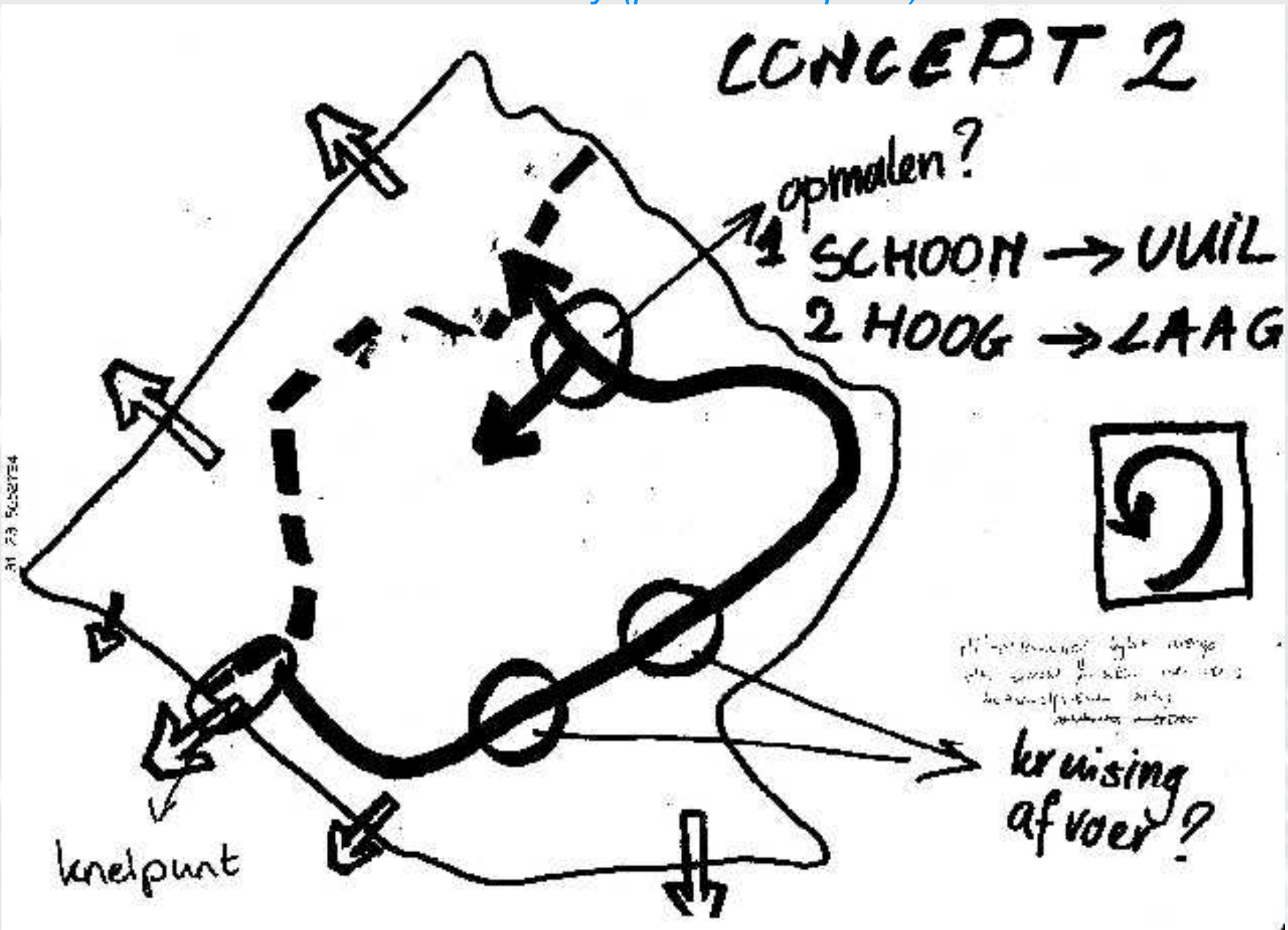
" an *image* of the geographic reality, constructed of symbols, that gives a selection of the phenomena or characteristics, that is the result of creating work and conscious choices of its creator, and designed for use when spatial relations are of special interest." **(International Cartographic Association, 2003)**

a *map* is a spatial model **(Kraak and Ormeling, 1997)**

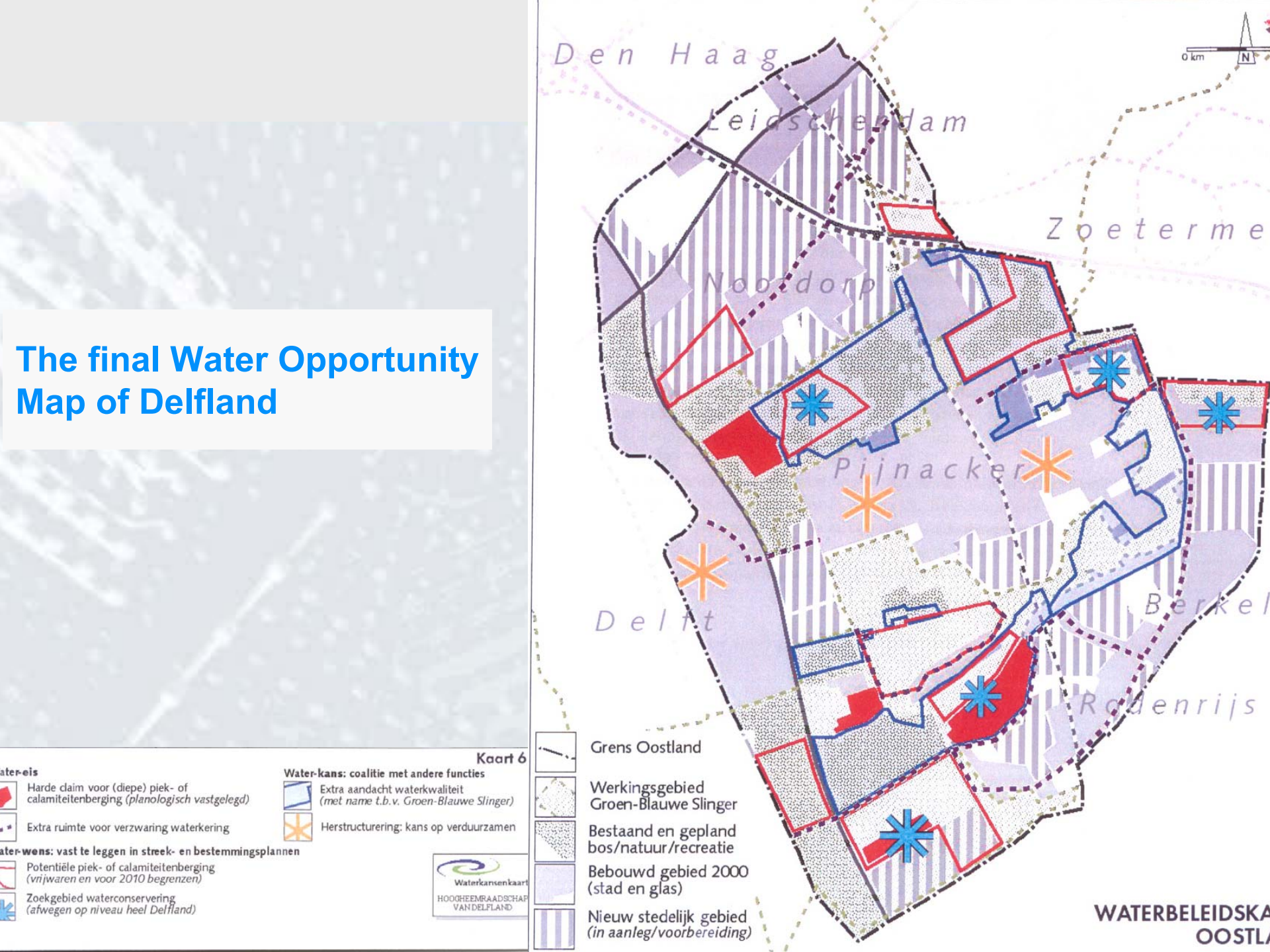
a *map image* is a visual representation of a spatial mo

The alternative:

Water circulation from clean to dirty (preferred option)



The final Water Opportunity Map of Delfland



Framework

Context (C)

Setting of the discourse:

- Constellation of actors involved in map use
- Phase of policy making process
- Issues on the agenda: the topics of the current discourse

Dynamics of the policy process:

- Overall objectives of actors in process
- Uncertainty
- Conflict and trust
- External events

Map use in a discourse (M)

Characteristics of Use of map(s):

- **Intention** with map by (individual) actors
- **Interaction** by questioning, claiming, illustrating, debating etc.
- **Change and exchange** of views, values and options as result of interactions with (reference to) the map

Characteristics of map Images:

- **Message**(s), title and themes
- **Conceptualization**: aggregated model of reality; metaphor that structures and orders relations
- **Coding of information**: *scale,* legend, boundaries, symbolization
- **Layout**: used visualization tools, cartographic layout
- **Justification**: time horizon, status of map, author

Effects (E)

Level 1: Perceived usefulness of map by individual actors in the discourse

1. Intended function of map is achieved	++
2. Map served unexpected function	+
3. Map did not fulfill function	-
4. Map had unexpected, undesired effect	- -

Level 2: Reconstruction of underlying reasoning mechanisms