

# Synthesis and storyline

*Main steps in developing a storyline for an issue paper*

Leon Hermans, Faculty of Technology, Policy and Management

# Steps in developing a storyline

Main message

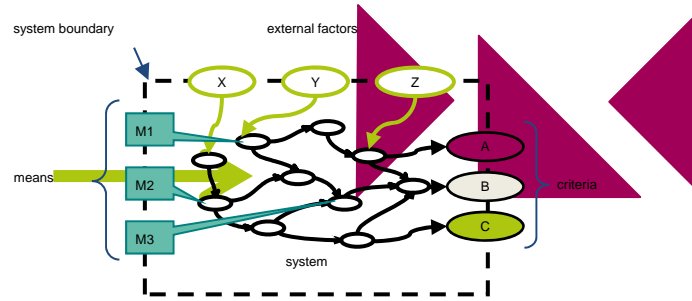
Issue paper format

Full storyline

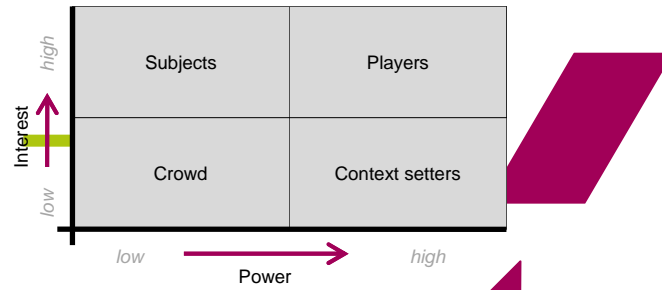
Iteration: check and sharpen key findings



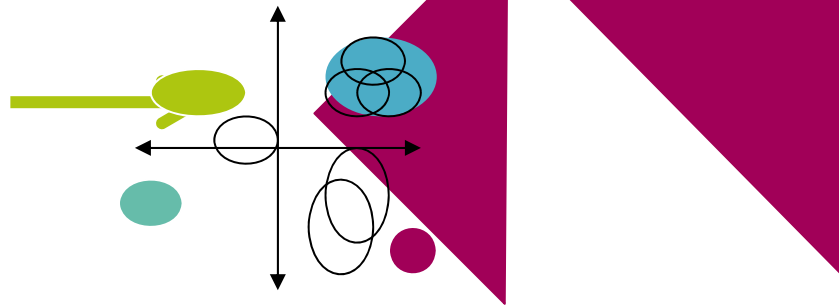
# Systems analysis

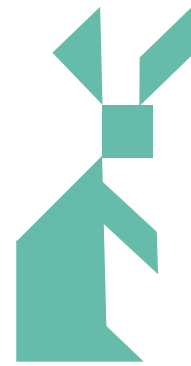
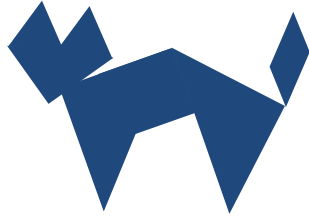
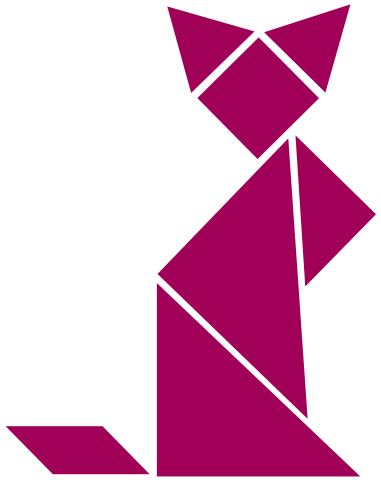


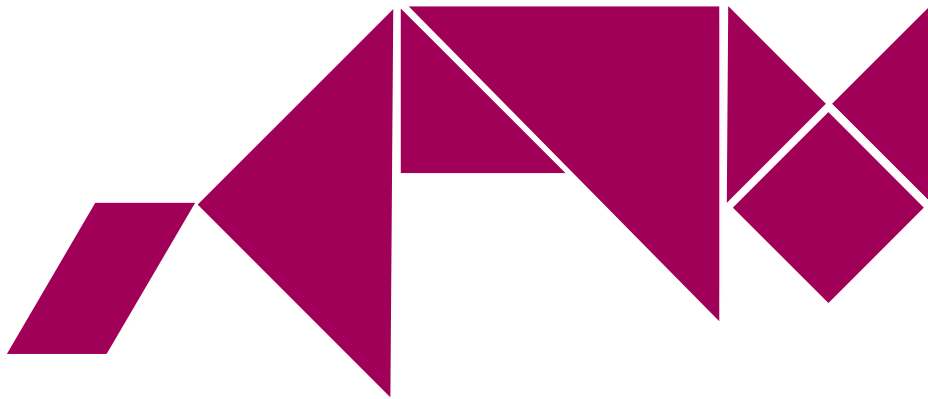
# Actor analysis



# Scenario analysis







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## B. Issue paper format

1. Client's problem?
2. Main finding(s)?
3. Knowledge gaps?
4. Further research?

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Issue paper format

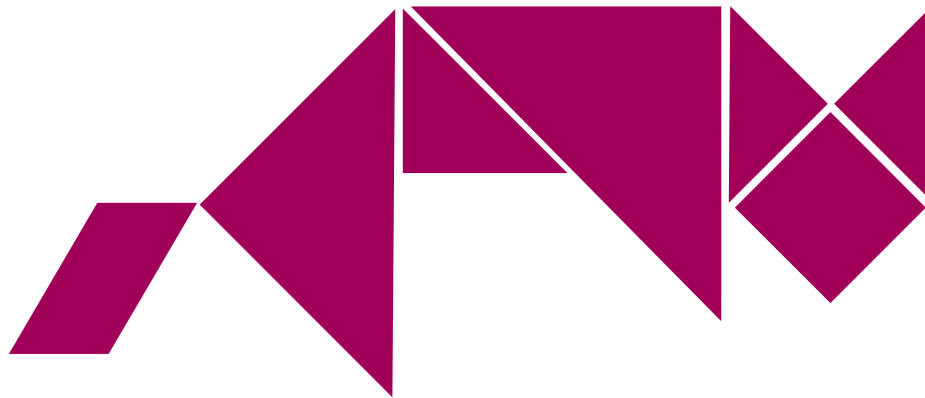
Full storyline

Iteration: check and sharpen key findings



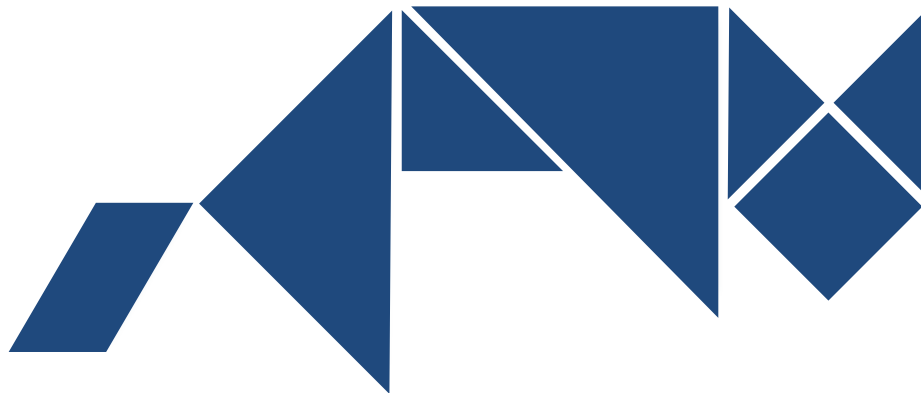


Iterate throughout



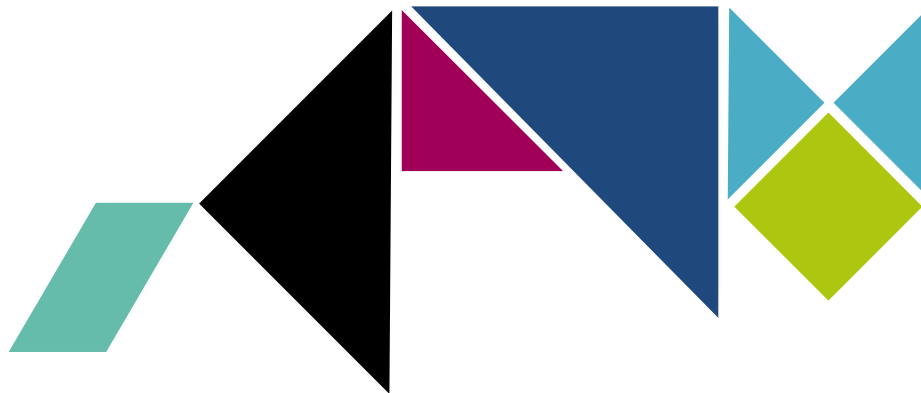


Iterate throughout





Iterate throughout



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## Storyline: Recycling in the Netherlands

### Part 1: Introduction

[approx.. 1 – 1,5 pages / 500 – 800 words]

- 1) Introduction
  - a) Issue: waste management
    - i) Waste management is important issue. Improper management can damage public health and/or environmental health. Also, it can contribute to climate change mitigation, for instance as green/bio-fuel source (I&M, 2010)
  - b) Problem owner and problem: Ministry and national policy objectives recycling
    - i) In the Netherlands, the Ministry of Environment and Infrastructure is responsible for national waste management policy.
    - ii) National waste management policy 2009 – 2021 (“Landelijk Afvalbeheer Plan 2) has been developed.
    - iii) Priority order: “Lansink’s Ladder” (see Wikipedia, 2012).
    - iv) Official policy objective: 83% of waste recycled by 2015 (I&M, 2010)
  - c) Means: Current policy measures (Milieu, 2011; Wiel, 2011; Hoogers, 2012):
    - i) stimulating innovation and knowledge (“grondstofrotonde”, involving municipalities, waste companies and producers
    - ii) reduce red-tape (administrative burdens) for international waste transportation,
    - iii) stimulating separated waste collection and public awareness campaigns).
  - d) Complications:
    - i) But: already high amount of waste recycling in Netherlands, more not easy.
    - ii) Needs to stay within financial limits
    - iii) Getting in more waste from abroad will meet ‘demand’, but not necessarily a desirable solution.
  - e) Problem statement: How to increase amount of recycled waste without raising financial burden for Ministry of Infrastructure and Environment and without an increased reliance on foreign waste?
  - f) Outline of issuepaper structure

### Part 2: Problem Analysis

[approx.. 6-8 pages / 3.500 words]

- 2) Competitiveness of recycling within waste management system
  - a) Over-capacity in waste incineration plants is barrier for recycling objectives
    - i) Three policy measures considered. All (“grondstofrotonde”, reducing administrative barriers, stimulating separate waste collection streams) will in principle have positive effects on key objectives of the Ministry (more waste recycled, lower costs, limited dependence on foreign waste – see Rijksoverheid 2012 and Annex with Goal Tree). (based on Annex with causal relations diagram and system diagram)
    - ii) However, effects of these measures are likely to be undone by the effect of the existing over-capacity in waste incineration plants in the Netherlands. This keeps costs of waste incineration low, meaning that recycling cannot compete with waste incineration as a destiny for waste. (based on Annex with causal relations diagram and system diagram, backed mainly by Perree, 2011, Brbs, 2011). In fact, incineration plants “need” fuel.
  - b) Instruments to increasing the competitiveness of recycling: Reduce the overcapacity in waste incineration plants, or increase the supply of waste to feed the incineration plants.

- i) Instruments that the Ministry could use: introduce a tax on waste incineration (to affect current low price of waste incineration), reintroduce tax on dumping waste, introducing a subsidy for recycling, force incineration plants to close (legal measure), introduce (strict) laws and regulations on waste recycling, and heighten the existing import cap for foreign waste (Perree, 2011; I&M, 2010).
            - ii) However, these measures will help to increase the position of recycling vis-à-vis incineration (and dump-sites), but will also have negative consequences. Related to costs, dependency on foreign waste, or opposition from other parties.
- 3) Longer term approach needed (>2015)

An effective policy to increase recycling in the future requires a longer-term approach, for instance to be able to shut down certain existing waste incineration plants

  - a) Looking into waste incineration plant closure
    - i) Achieving recycling goals of 83% of waste being recycled, roughly requires an increase of 1.5 million tons of waste per year (Milieu, 2011). Current over capacity in waste incineration plants is estimated at 1 million tons per year (Nuzakelijk, 2012). Further reducing waste for incineration with 1.5 million tons thus seems difficult.
    - ii) It will run into protests from plant operators and municipalities. Incineration plants are run by independent organizations, whose closure cannot simply be ‘ordered’. Furthermore, the Ministry and its Deputy-Minister have already signaled they do not want to see closure of plants, but consider this an issue that needs to be resolved by the market, where private organizations (Harlingen, 2012). They find strong allies in municipalities who are currently responsible for waste collection in their municipalities, who benefit from the low costs associated currently with incineration and dumping. Many municipalities have long-term running contracts with waste incinerators, and/or have invested in a heating network for city heating using the heat generated by waste incinerators.
    - v) This last aspect shows that waste incineration also provides a source of ‘green’ energy production, something that is also of interest to (other parts of) the Ministry of Infrastructure and Environment.
  - b) Using imports of waste as long-term strategy
    - i) Waste incinerators could be ‘fed’ by import of waste, as currently the Netherlands and Germany offer the lowest prices for waste incineration in the EU (Persson, 2012). On the longer-term this seems a difficult strategy, because the supply of (cheap) foreign waste is likely to reduce in the future, as countries as Poland, Cyprus, Bulgaria are likely to create their own facilities (AgentschapNL4, 2012; Defra, 2011).
    - ii) Also, waste imports are problematic for the Ministry, as they may contradict the higher environmental objective of reducing greenhouse gas emissions.
  - c) Towards long-term reduction in waste incineration capacity
    - i) Difficult as it may seem, closing incineration plants in the future seems inevitable., and leaving it purely to the market may result in an undesirable competition and race-to-the-bottom between incineration plants.
    - ii) Closure of plants cannot be ordered, but there are certain conditions that need to be met to reduce opposition from other parties against closure: plants older than 20 years (average time to recover investments, AgentschapNL2, 2011); no running contracts with municipalities for waste disposal; no contracts/integration in local heating networks.
    - iii) Currently, none of the plants will meet all these requirements, and therefore, short-term measures are needed as well.



## Part 1: Introduction

- Client's problem?

## Part 2: Problem Analysis

- Main finding(s)?
- Knowledge gaps?

## Part 3: Research Proposal

- Further research?



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## Overarching structure

- Actors
- Objectives
- Solutions
- Sub-systems / system behaviour
- Phases
- Etc.



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Thank you for your attention!