National AdaptationScan for local authorities

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Contents

Management summary

The AdaptationScan is a qualitative tool which helps policymakers to pinpoint risks and opportunities posed by climate change within their area. It can be used to organize an adaptation agenda for a local government.

The AdaptationScan consists of two linked databases - one containing climate change effects and one containing adaptive measures. These effects and measures interact in complex ways.

The AdaptationScan mainly aims to support local authorities (municipalities), and regional authorities (provinces and water boards). The AdaptationScan is developed for use at managerial level as well as administrative level.

The project has the following goals:
- Disclose academic knowledge on effects of climate change and available adaptive measures for local authorities
- Formulate new adaptation-related questions from policy makers.
- Develop a practical interactive instrument to:
  - Make local effects of climate change visible
  - Link adaptive measures to effects of climate change
  - Show the impact (both positive and negative) of a certain combination of adaptive measures on the effects of climate change

During the development of the AdaptationScan, the Scan is used in the following projects:
- Hotspot Tilburg;
  In the Tilburg project, climate change effects were systematically investigated on a local scale for the first time. The climate change - effect matrix developed in Tilburg formed the basis for the AdaptationScan database.
- Province of Groningen;
  In a pilot study, consultants evaluated a draft regional development plan put together by the provincial authorities in Groningen, on the north-eastern edge of the Netherlands. They selected the 18 most relevant impacts of climate change on health and the environment in the area and used the AdaptationScan to identify areas where adaptive measures were lacking and made recommendations where necessary. Many of the measures already in place in Groningen were not suited for tackling the predicted effects, and the AdaptationScan helped identify measures that had been proven elsewhere which could be added to the plan.
- The City of Hoogeveen;
  The Hoogeveen municipality wanted to know the effects of climate change and what measures could be taken to deal with these effects. Using the AdaptationScan BuildDesk and Tauw explored impacts and measures in two workshops with municipality officials.
- National Landscape "Het Groene Woud";
  An AdaptationScan has been performed by BuildDesk and Tauw for the province of Noord-Brabant, concerning the National Landscape 'Het Groene Woud' (area between Eindhoven, Den Bosch and Tilburg). The goal of this project was to gain insight in climate change effects and formulate adaptation tasks for the area. In this project, an analysis was made of the effects of climate change based on the so-called 'layer approach' by differentiating to the three identified layers in the area: nature, landscape and cities.
  During the project relevant adaptation projects were identified that corresponded with the development strategy of the area and present projects and activities. A stakeholder's analysis was part of this project.

The AdaptationScan was used in combination with expert interviews to formulate adaptation possibilities.

Policy instruments & adaptation measures

Currently the AdaptationScan database contains a mix of:
- Policy instruments (e.g. education, subsidies, rules & regulations, covenants)
- Policy priorities (e.g. 'more room for water')
- Measures for authorities (e.g. strengthening of dikes)
- Measures for target groups (e.g. green roofs)

This is a consequence of the way the research into adaptive measures has been conducted: all available written adaptive measures were collected. These proved to be rather diverse, consisting of policy instruments, policy priorities and concrete measures in the physical environment. Since there is no taxonomy of adaptive measures available it was decided to take in all 'measures' in the databases without further categorization.

However, it is thought the AdaptationScan could be further improved by differentiation of 'measures' into the following categories:
- Policy priorities or targets (what an authority wants to accomplish)
- Policy instruments (the policy means of a local authority of government)
- Adaptation measures (interventions in the physical environment, in the society, in company processes, buildings, organizations, etc.)

This might lead to two extra sub-databases within the current database: one for policy targets and one for policy instruments (see Figure 5). This will result in an enormous extension of the AdaptationScan methodology and a multiplication of the number of relationships within the database.

Experts, 17 of September 2009

In general, the experts had the opinion that the National AdaptationScan is a good instrument to get discussions going within the organization where the Scan is used. Reactions were very positive and the value of the Scan was recognized.

Lessons learned

Despite setbacks during 2007 the project partners (including interacting with potential project participants) made an enormous intellectual effort. This has led to the following insights (unsorted):
- The project structure with a COP (community of practice) proved to be rather complex, elaborative and costly. It was not attractive enough to entice municipalities to financially participate in the project
- Although municipalities are very interested in adaptation (and the AdaptationScan) they have no budget and manpower available
- The requirements that municipalities and provinces (initially) set to the AdaptationScan varied, yet were reasonably straightforward. Questions they want to see answered are:
    - What physical and social impacts of climate change can we expect?
    - What adaptation measures can or should we take to ward off those threats (or opportunities)?
    - Is the current policy (plan, project, design requirements, etc.) climate proof?

Yet it seems mainly interested in qualitative results of a Scan, e.g. in lists of relevant impacts and measures. Adaptation is a relatively unknown and unexplored task, with the exception of water related issues.
The AdaptationScan will initially contribute to raising awareness, disseminating knowledge and understanding and start discussion about roles and responsibilities regarding adaptation.

Maintenance and updates

The AdaptationScan should at any time present the state-of-the-art scenarios, scientific knowledge and evidence-based effective measures. This means that the databases should be updated on a regular basis:
- An input module for climate changes, effects of climate changes, adaptive measures and relations. This way the latest developments can be added to keep the AdaptationScan up to date. The body of knowledge on climate change effects is rapidly growing. Regular updates of this knowledge in the AdaptationScan database are essential. Also scores could be added to the extent in which a measure counteracts a climate change effect
- The same goes for adaptive measures. Some knowledge fields (e.g. water management) are well developed. Other fields (health, ecology, city heat) are still in its infancy regarding effective adaptive measures. New measures pop up continuously, but the effectiveness of many has still to be proven
- Interactions and feedbacks between effects, effects and measures and measures between themselves is also a knowledge field that is still in its early stages
All this implies a rather labor intensive (and costly) updating and maintenance procedure. Currently there is no such provision, which is a major threat to the viability of the instrument.

Potential commercial use of the Scan

- Reference book of knowledge providers - 'yellow pages' for experts on specific climate change effects (e.g. heat stress, water flow modeling, ecosystems, health threats, and so on)
- Reference book of measures and solutions - 'yellow pages' for solution providers (e.g. green roofing, building solutions, water infiltration, floating buildings, heat storage, shading, heat resistant building, water storage solutions, climate robust crops, and so forth)

6

1.   Introduction

Climate change will have major impacts on the environment and human health within the next few decades. Adapting to climate change at local and regional levels will require policymakers to take decisions based on many different effects of climate change. In order to make the most appropriate decisions, policymakers will need to understand how these effects are interrelated.

The AdaptationScan is designed to help policymakers factor the effects of climate change into their development plans. The AdaptationScan investigates climate change scenarios and their effects for specific sectors and provides adaptive measures to deal with both positive (e.g. increased tourism) and negative climate change effects (e.g. decreased air quality).

The AdaptationScan is a qualitative tool which helps policymakers to pinpoint risks and opportunities posed by climate change within their area. It can be used to organize an adaptation agenda for a local government.
The AdaptationScan consists of two linked databases - one containing climate change effects and one containing adaptive measures. These effects and measures interact in complex ways. For instance, heavier rainfall could lead to the event of more flooding in the built environment. One adaptive measure in this case could be more space for water. However, more space for water will lead to more land claim.

2.   The COM15 project

2.1   Project background

The 'AdaptationScan for local authorities' communication project is number 15 (COM15) in the 'Climate Changes Spatial Planning' (Klimaat voor Ruimte, KvR) program. The project started late 2006 and was led by Alterra. Project partners were Alterra, Ecofys, Tauw and BuildDesk (formerly CEA).

The first half of 2007 was used by the consortium to set up the project plan. The project was approved in August 2007 by the KvR Program Council and the Board. On October 2, 2007 Ecofys withdrew from the project for internal reasons. The remaining three project partners decided to proceed together and adjusted the project plan, budget and co-financing in consultation with KvR.

Throughout 2007 the consortium searched for co-financing with little result. Although municipalities and provinces showed interest in the subject and the AdaptationScan, there was little budget available to participate in the project. In February 2008 Alterra withdrew from the project because they considered that the financial risk was too high. Tauw and BuildDesk decided to complete the project together, with Tauw as project coordinator.

In March 2008 Tauw and BuildDesk produced a first version of the AdaptationScan which was presented in a workshop with delegates and officials of the province of Groningen on April 3, 2008. The AdaptationScan was used to test how climate proof the 'Provincial Area Plan' (POP) was. This

first test was successful and Groningen requested BuildDesk and Tauw to run the AdaptationScan more thoroughly on the preliminary-POP.

The project day of KvR on June 18, 2008 showed that outstanding researchers saw an important role for the AdaptationScan in translating scientific research into practice.

2.2   Goals

The project has the following goals:
- Disclose academic knowledge on effects of climate change and available adaptive measures for local authorities
- Formulate new adaptation-related questions from policy makers.
- Develop a practical interactive instrument to:
  - Make local effects of climate change visible
  - Link adaptive measures to effects of climate change
  - Show the impact (both positive and negative) of a certain combination of adaptive measures on the effects of climate change

2.3   Target group

The AdaptationScan mainly aims to support local authorities (municipalities), and regional authorities (provinces and water boards). The AdaptationScan is developed for use at managerial level as well as the administrative level.

Policy relevance
Adaptation to climate change is a relatively new field of policy for most local governments in the Netherlands. Although local authorities are used to dealing with extreme weather events like storms, heavy rains and floods, not all climate change effects are accounted for in the policies. This is where the AdaptationScan can help.

Short-term relevance
Climate change and extreme weather events already influence the daily operations of communities. Heavy rains can cause local flooding, traffic jams, damage to buildings and agricultural areas. Draughts and heat waves cause discomfort, premature death of elderly and vulnerable people, damage to harvest, plagues, water shortage and so forth. Most of these effects are only dealt with afterwards e.g. with a heat wave emergency plan. Preventive adaptive measures can and should be taken on the short term to prevent more discomfort and damage. The AdaptationScan can help authorities by defining which measures can be taken.

Long-term relevance
Through spatial planning, building permits, restructuring plans, green field development, infrastructural developments & water management, local authorities decide on issues which have long term implications. We now know that climate change will have (in almost all scenario's) severe effects. Current decisions with long term relevance should have sufficient flexibility and robustness to cope with different scenarios.

2.4   Results

To achieve the goals described above the following results are realized by the AdaptationScan:
1.   Maintain interaction with users of the AdaptationScan
2.   Facilitate users to:
- Choose relevant climate change effects and adaptive measures
- Create and adapt overviews of physical changes
- Create overviews of the effects of climate changes for specific working fields
- Select single adaptive measures
- Create overviews of adaptive measures based on climate changes and working fields
- Create selections per working field or authority level
- Create an overview of effects affected by a certain set of measures
- Weigh climate change effects and adaptive measures according to own interests (help prioritize measures in local policy)
3.   Deliver the following output:
- Overviews of all combinations of climate changes, climate change effects and adaptive measures
- Visualizations of qualitative analysis: to what extent is a set of measures climate proof?
- List of literature on which the climate changes, effects and measures are based.

2.5   Activities

Activities undertaken to develop the AdaptationScan were:
- Acquisition of pilot projects (and co funding)
- Problem analysis: systematic approach of the climate change problem, local impacts and adaptive measures
- Literature search: effects & measures and its interrelations
- Global design of the AdaptationScan
- Pilot applications of the AdaptationScan
- Adjustment & completion of the databases
- Programming (by external contractor)
- Production of online version & user interface
- Final testing (internal & external presentations & requests for comments)

2.6   Public appearances

During the developing of the AdaptationScan, public appearances have been made in an effort to get public attention as well as improvements for the Scan.
Several presentations have been held. The presentations are chronologically ordered:
- Amsterdam, 10 February 2008
- Aken, 2 April 2008
- Groningen, 3 April 2008
- Rotterdam, 27 November 2008
- Bonn, Circle, 16 July 2009
- Utrecht, National AdaptationScan expert session, 17 September 2009

Along with the presentations a product sheet and publication:
- Product sheet climate adaptation
- EMS2008-A-0647.pdf

3. The AdaptationScan

3.1 The instrument

The AdaptationScan is an online instrument which is able to assist in the evaluation of up-to-date policy concerning climate change on a local scale. The instrument also gives an overview of the possible adaptive measures which can be implemented to become (more) climate proof. The AdaptationScan is based on databases in which the climate change effects, the adaptive countermeasures and their effectiveness are correlated to each other. Figure 1 shows a screenshot of the AdaptationScan.

Figure 1.
The National AdaptationScan starting screen.

3.2 Database structure

The database links the cause and (primary and secondary) effect relations concerning climate change, known to date. The AdaptationScan can be updated by the user, however structural maintenance of the database is not yet provided for. How these relations work, is shown in Figure 2.
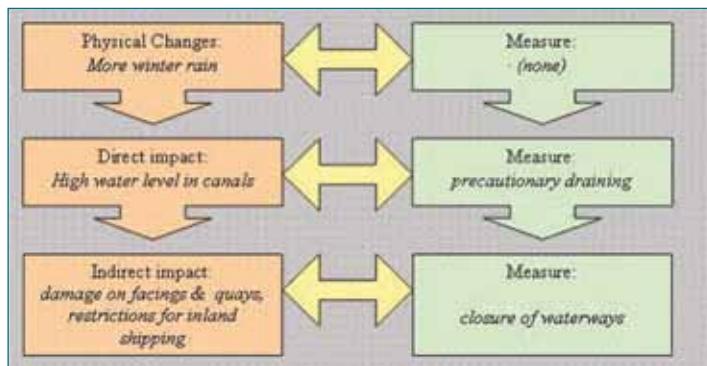
Figure 2.
Database structure.

3.3   Components

The three main components of the AdaptationScan (figure 1) are:
1.   Climate changes ('Klimaatveranderingen')
2.   My world ('Mijn wereld')
3.   Measures ('Maatregelen')

Climate changes

Climate changes for 2050 are described in the KNMI 06 scenarios for the Netherlands. These scenario's describe the expected climate change on a national scale, but no differentiation is made for regional effects and local effects e.g. in a city. KNMI distinguishes four different scenarios (G, G+, W, W+, see figure 3) which are currently incorporated in the AdaptationScan. Recently KNMI published a new scenario scheme, which has not been implemented in this version of the AdaptationScan. Not all climate changes occur in every scenario. The AdaptationScan offers the possibility to take all effects of climate change into account, select a specific scenario or select multiple specific climate changes (create a custom scenario).
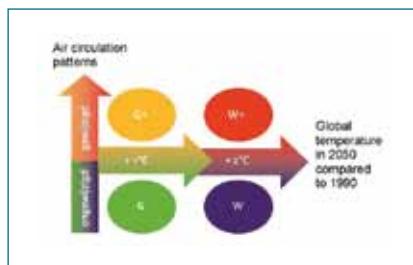
Figure 3.
KNMI '06 climate scenarios.

It is clear that climate change can have serious consequences in daily life. In the AdaptationScan we define these consequences as 'events'. For example, the climate change effect 'increased evaporation' can lead to the event: 'increased number of fires'.
The event 'increased number of fires' can lead to another event. These secondary events have also been included in the database.

My world

Events in 'my world' take place in communal sectors, e.g. 'nature' or 'built environment'. Some events can take place in several sectors. For example the event 'increased number of fires' affects both the sector 'nature' and 'built environment'.

Measures

Measures are defined as interventions in society that can be performed in response to the consequences of climate change. The result of measures being taken is visualized as follows:
↑ = feature increases
↓ = feature decreases
 ? = feature increases and decreases

The AdaptationScan is especially intended for use by local and regional policymakers (municipalities, water boards, provinces) but National Government has been included as an actor as well. An adaptive measure always falls within a policy domain of one or more governmental layer(s). Some measures can not be appointed to a responsible governmental layer and can for example only be realized by commercial parties or local civil organizations.

Relations in the database

All relations in the database have a certain direction. Climate changes and measures can have an up or down regulating effect on the incidence of other events. Measures taken after 2nd order events can, in turn, have their influence on 1st order events again, which is visualized in Figure 4.
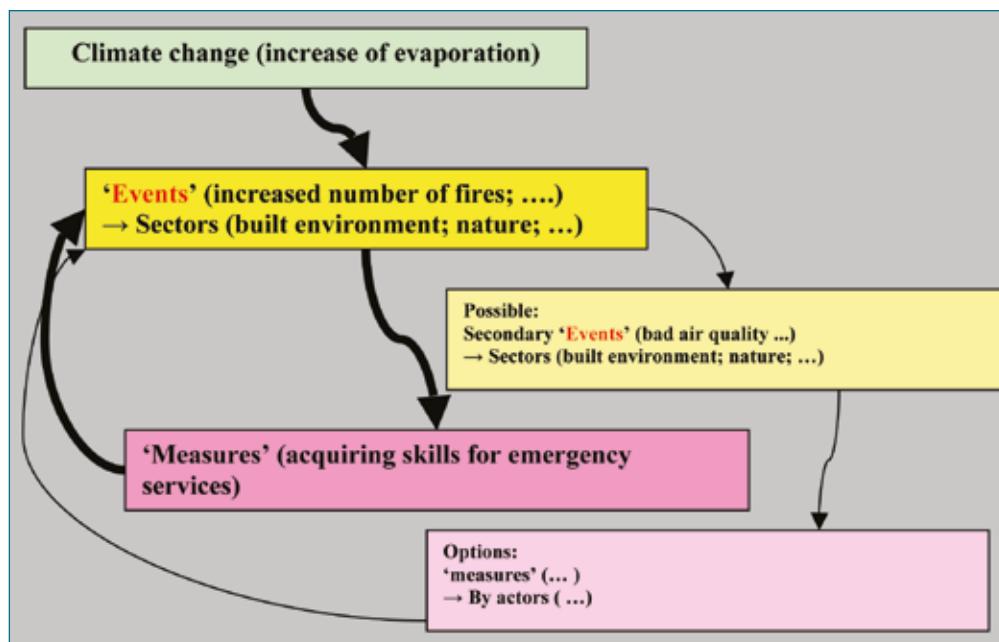

Figure 4.
Cause-effect-measure relations.

3.4 Potential applications

The AdaptationScan has two main user functions. A user can:
1. Create a climate change scenario and a strategy (a set of adaptive measures)
2. Perform a check on existing climate policy

When 'adaptation' has not yet been considered to be an important issue, the AdaptationScan can be used to create an 'effect scenario'. The user can select a number of effects of climate changes, relevant for a specific sector. The AdaptationScan then provides an overview of possible adaptive measures which the user can select. These functions can contribute to adaptation policy by:
- Making adaptation a recurring item on policymakers agendas
- Raising awareness for the need for adaptation
- Investigating cross-sector interactions of climate change effects & adaptation measures
- Generating input to multidisciplinary team workshops or program development
- Generating input to multi stakeholder processes
- Serving as a body of knowledge; reference book; catalogue of adaptation measures

When adaptation is already recognized and accounted for, the AdaptationScan can be used to perform a 'measure strategy'. The user can select a set of measures, relevant for a specific sector. The AdaptationScan provides an overview of its effects and additional measures and it can be seen if, for example, the existing climate policy is covering all sectors and if any simple no-regret measures are missing. In this way existing climate policy can be tested by:
- Checking climate change influences on policy such as: spatial planning, restructuring plans, green field development, etc.
- Checking for adaptation measures in plans, programs, etc.
- Serving as design support for plans, programs etc.

Policy instruments & adaptation measures
Currently the AdaptationScan database contains a mix of:
- Policy instruments (e.g. education, subsidies, rules & regulations, covenants)
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- Measures for target groups (e.g. green roofs)

This is a consequence of the way the research into adaptive measures has been conducted: all available written adaptive measures were collected. These proved to be rather diverse, consisting of policy instruments, policy priorities and concrete measures in the physical environment. Since there is no taxonomy of adaptive measures available it was decided to take in all 'measures' in the databases without further categorization.

However, it is thought the AdaptationScan could be further improved by differentiation of 'measures' into the following categories:
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This might lead to two extra sub-databases within the current database: one for policy targets and one for policy instruments (see Figure 5). This will result in an enormous extension of the AdaptationScan methodology and a multiplication of the number of relationships within the database.


Figure 5.
Expansion of current AdaptationScan with two extra databases.

3.5   Manual

The manual of this project is included in the website of the project: http://adaptatiescan.nl.

4. Evaluation

The AdaptationScan has been evaluated by customers in pilot projects and by scientists in an expert meeting.

4.1 Pilot projects

Hotspot Tilburg ('pre-pilot')

The Hotspot Tilburg is a KvR-project in which a forerunner of the AdaptationScan methodology has been tested. In this project a scan was performed as follows:

- Calculation of a local climate change scenarios (with a KNMI calculation tool and local historic climate data)
- Literature scan on relevant climate change effects
- Internal thematic workshops on relevance of climate change effects for local policies
- Presentation and workshops during a local multi-stakeholder seminar

In the Tilburg project, climate change effects were systematically investigated on a local scale for the first time. The climate change - effect matrix developed in Tilburg formed the basis for the AdaptationScan database.

The need for calculating climate change scenarios on a local scale was made redundant by another KvR-project: the 'Climate impact Atlases' in which climate change effects (for the four KNMI06 scenarios on a country scale) were made visible on a provincial scale.

Province of Groningen

In a pilot study, consultants evaluated a draft regional development plan put together by the provincial authorities in Groningen, on the north-eastern edge of the Netherlands. They selected the 18 most relevant impacts of climate change on health and the environment in the area and used the AdaptationScan to identify areas where adaptive measures were lacking and made recommendations where necessary. Many of the measures already in place in Groningen were not suited for tackling the predicted effects, and the AdaptationScan helped identify measures that had been proven elsewhere which could be added to the plan.

During the development of the Provincial Area Plan (Provinciaal OmgevingsPlan, POP) it became clear that high ambitions for adaptation to climate change were necessary. Furthermore it had to be determined to what extent climate proofing was actually achieved with the plan. For this reason an AdaptationScan was performed. The method is visualized in Figure 6.

The first Scan took place on the basis of the preliminary POP (score 50 %). Recommendations for climate proofing were given, which would result in a score of 75 %. Afterwards the preliminary POP was scanned again and the final score was determined at 67 %.
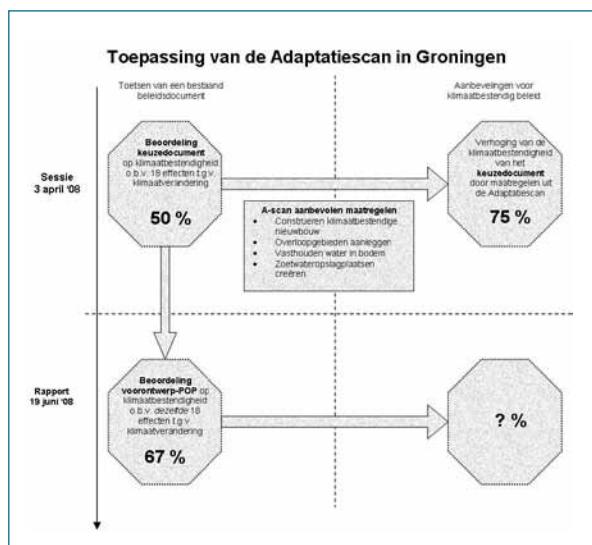
Figure 6.
AdaptationScan applied to the POP Groningen.

The climate proof score was determined by measuring to what extent the most relevant effects for Groningen of climate change had been countered by adequate policy. The effects were weighed, according to the (preliminary-) POP. On this basis, an average score was divided in a so-called Climate thermometer (Figure 7). The first result was a score of 67 %. If additional measures would be added to the POP a score of 75 % had been attainable. Figure 8 shows the policy fields which should be added to obtain the 75 % score.
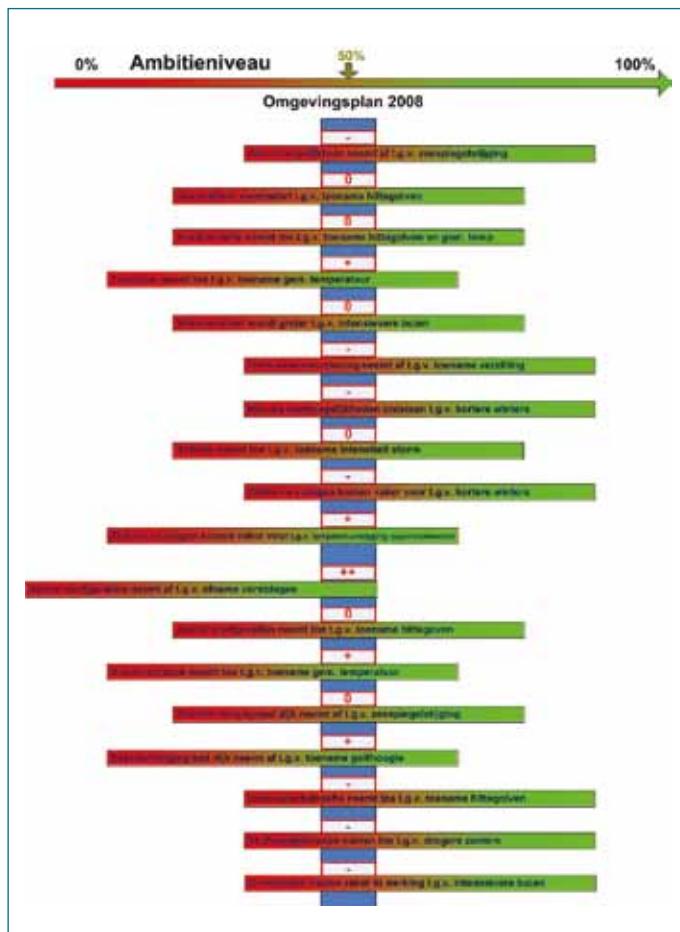
Figure 7.
Climate thermometer (preliminary POP).
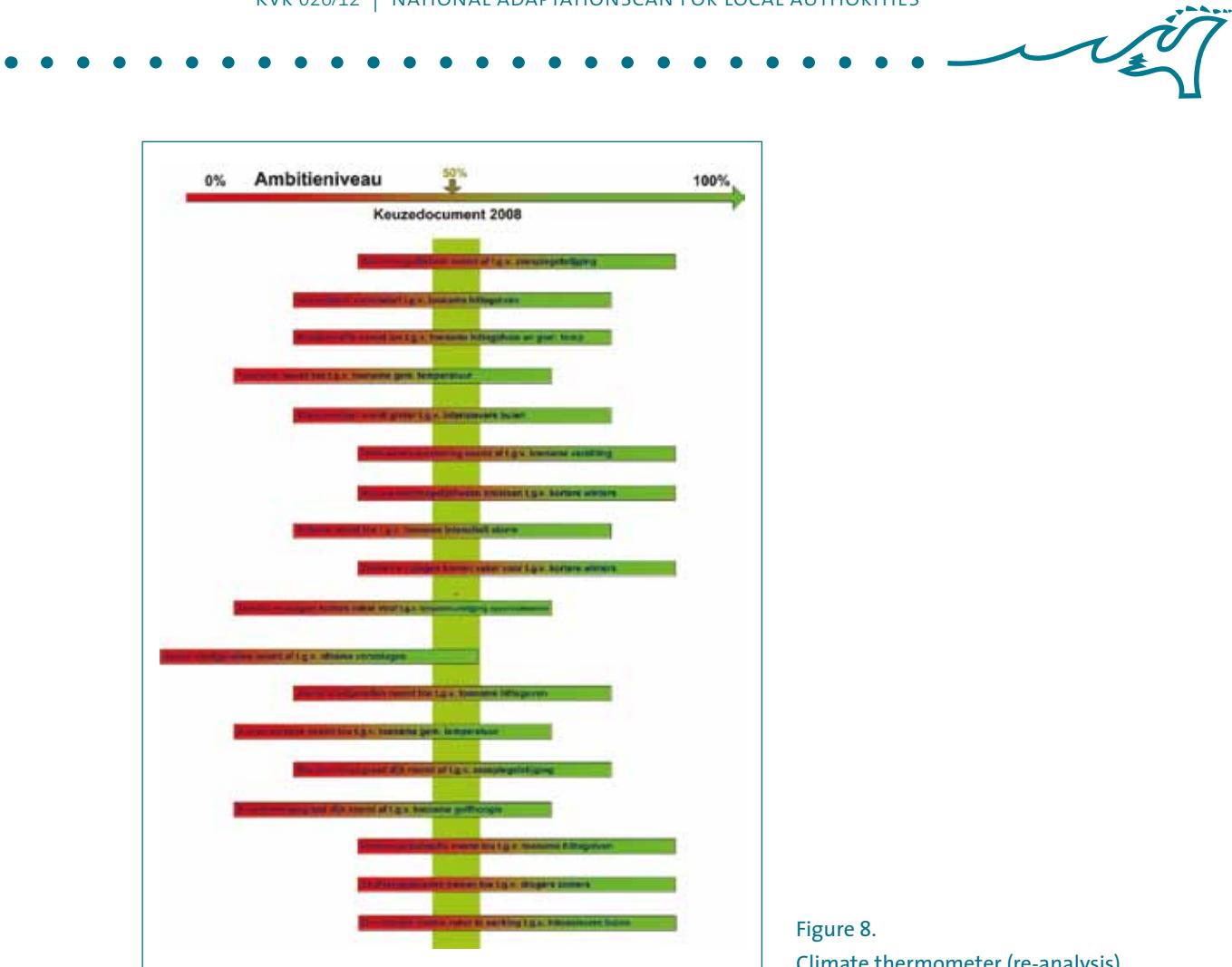
Figure 8.
Climate thermometer (re-analysis).

Effects of climate change
- Drain ability decreases due to sea level rise
- Tourism is increasing due to increased average temperatures
- Drinking water supply is decreasing due to increased salinity
- New crop opportunities as a result of shorter winters
- Diseases and pests are more common due to surface warming
- Outdoor recreation increases due to increased average temperatures
- Degree of protection by dike decreases due to sea level rise
- Drift sand areas increase due to drier summers

Figure 9.
Added themes contributing to climate proofness of POP.

Then the total score of the climate proofness of the POP was determined. The Scan indicates that the POP is 67 % climate proof.

When the thermometers are compared, vast improvement in some topics is clear. Yet, some have not been improved in such a manner, that they can be called climate proof. This means one can conclude that the POP is reasonably climate proof, but when it comes to long-term issues, there is room for improvement.
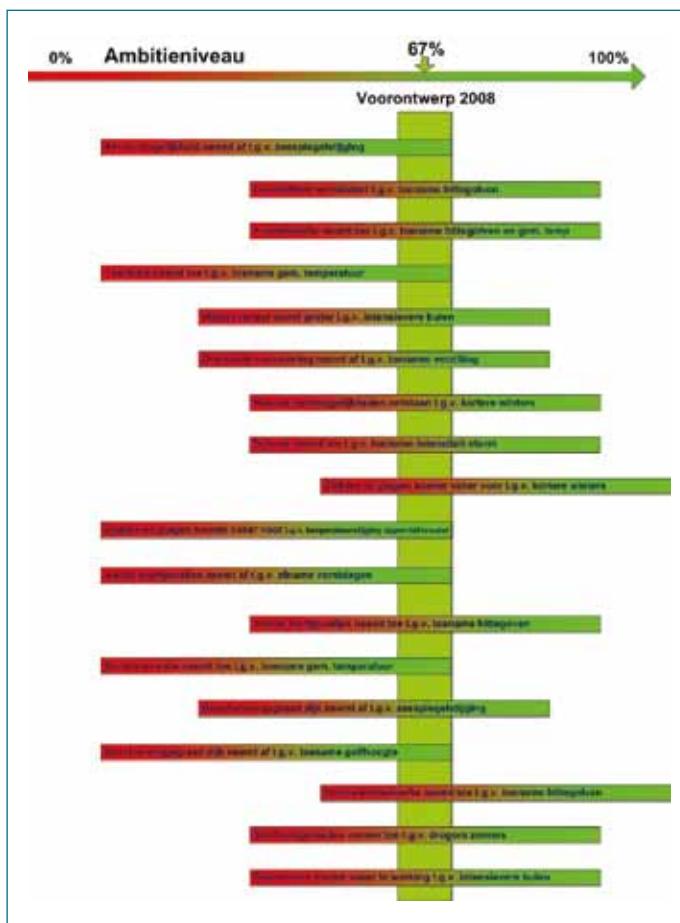
Figure 10.
Climate proofness of the POP (67 %)[1].

Hoogeveen

The Hoogeveen municipality wanted to know the effects of climate change and what measures could be taken to deal with these effects. Using the AdaptationScan BuildDesk and Tauw explored impacts and measures in two workshops with municipality officials.

The first workshop identified the top five of climate change effects for Hoogeveen. In no particular order these are:

1. Flood increase
    Rainfall will intensify: more rain will fall in shorter periods. This means that the drainage needs adjustment.
2. Sewer overflows are more common in force
    Due to increase in heavy rainfall, more water must be discharged in less time. This will cause sewer overflows to be used more frequently.
3. Heat load/waves
    The average temperature daily maximum will raise. The summer of 2003 will be considered normal in 2050. Cooling is important for people and buildings. Droughts are intensified.
4. Outdoor recreation increases
    Because it is warmer on average, more people will enjoy going out. The likelihood that people will remain in the Netherlands during the holidays and the popularity of the Netherlands with foreigners will also increase due to the pleasant climate that will prevail here.

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1   Sourse: Final repport Hotspot Groningen

5. Diseases and pests are more common
   The climate zones shift northward. This also shifts diseases and pests, for example the 'Oak Processionary' has been observed in Coevorden. Normally it is found in Southern Europe.

In a second workshop effects were linked to possible measures. Based on policy intentions two areas were chosen, namely the City Centre and Rural area north, and two specific policy fields, namely water management and events, tourism and recreation.

In order to achieve a coherent strategy and implementation of adaptation, the following steps have to be taken: awareness, choice of one approach, the preparation of an action plan and the implementation of adaptation measures.

Finally, the following recommendations for integration of adaptation into the policy of the municipality of Hoogeveen were made:
1. Setting an official work group formulating a mission statement for the entire municipal policy to review, measure and packages involved in the proposed additions to existing and new policies
2. All field assignments in the town of Hoogeveen used AdaptationScan as a basis to identify climate-proofing aspects
3. Administratively establish the review, measure and package proposed additions ensuring the stability of the local climate policy
4. A two yearly external evaluation to be done on the existing policies and the implementation/ realization of the policy and review of the newly formulated policy

Groene Woud

An AdaptationScan has been performed by BuildDesk and Tauw for the province of Noord-Brabant, concerning the National Landscape 'Het Groene Woud' (area between Eindhoven, Den Bosch and Tilburg). The goal of this project was to gain insight in climate change effects and formulate adaptation tasks for the area. In this project, an analysis was made of the effects of climate change based on the so-called 'layer approach' by differentiating to the three identified layers in the area: nature, landscape and cities.

During the project relevant adaptation projects were identified that corresponded with the development strategy of the area and present projects and activities. A stakeholder's analysis was part of this project.

The AdaptationScan was used in combination with expert interviews to formulate adaptation possibilities.

4.2 Expert meeting

On September 17, 2009 an expert meeting on the National AdaptationScan was organized in cooperation with the KvR program office. Goal of the meeting was to get an expert opinion on the AdaptationScan, to be used for improvement in due time. Seven experts were present.

The meeting started with a presentation on the background of the AdaptationScan. Why was it build, i.e. background, and what are the purposes for use of the AdaptationScan. After the background was explained, an introduction to the practical usage of the AdaptationScan was given.
Questions asked shed new light on issues that for the developers had become normal.
An example was the 'Reken door' (calculate) button. Since nothing is actually calculated, but qualitatively processed, 'Verwerken' (process) seemed a more fitting description. During a practical session, the experts were able to get acquainted with the Scan during which valuable information was gathered. The meeting was concluded with a discussion about the uses and value of the Scan.

In general, the experts had the opinion that the National AdaptationScan is a good instrument to get discussions going within the organization where the Scan is used. Reactions were very positive and the value of the Scan was recognized.

4.3 Conclusions

Despite setbacks during 2007 the project partners (including interacting with potential project participants) made an enormous intellectual effort. This has led to the following insights (unsorted):
- The project structure with a COP (community of practice) proved to be rather complex, elaborative and costly. It was not attractive enough to entice municipalities to financially participate in the project
- Although municipalities are very interested in adaptation (and the AdaptationScan) they have no budget and manpower available
- The requirements that municipalities and provinces (initially) set to the AdaptationScan varied, yet were reasonably straightforward. Questions they want to see answered are:
    - What physical and social impacts of climate change can we expect?
    - What adaptation measures can or should we take to ward off those threats (or opportunities)?
    - Is the current policy (plan, project, design requirements, etc.) climate proof?

Yet it seems mainly interested in qualitative results of a Scan, e.g. in lists of relevant impacts and measures. Adaptation is a relatively unknown and unexplored task, with the exception of water related issues.
The AdaptationScan will initially contribute to raising awareness, disseminating knowledge and understanding and start discussion about roles and responsibilities regarding adaptation.

5. Implementation and future use

5.1 Relationships with other instruments

The AdaptationScan is not a simple instrument that can be used without support of a consultant. Therefore the AdaptationScan is used in a route towards an adaptation agenda for the local government. In figure 11 an overview is presented of the several steps that have to be taken by a local government.
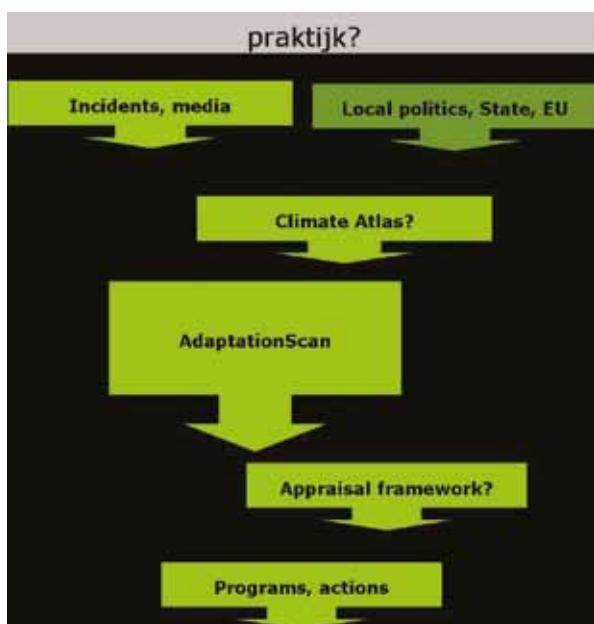

Figure 11.
Practice situation.

Normal practice nowadays is that the process is not organized. The local authorities are working on a day-to-day basis. The AdaptationScan gives the local authorities the opportunity to organize their policymaking. In this way they can adapt their policymaking to the climate changes. The results can be used to formulate an Adaptation agenda. In this way all sectors in the local authorities are represented and can organize their budgets around the adaptation theme.

The next figure visualizes the ideal situation in case of policymaking in the theme of climate adaptation.
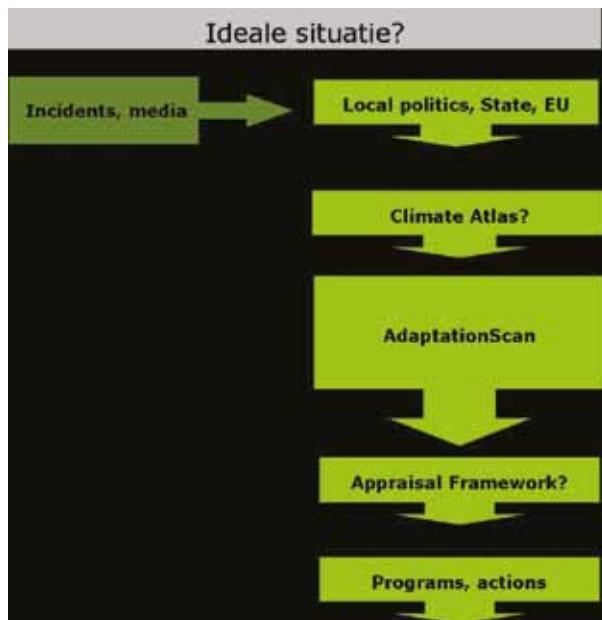

Figure 12.
Ideal situation.

5.2   Development

In this paragraph, an example is given of a project proposal. This proposal has been adopted by the province of Drenthe as the way of using the AdaptationScan in order to achieve adaptation agendas in all municipalities and eventually in the whole province.

Implementation

In the province of Drenthe, the provincial government wishes to form an adaptation agenda with, by and for the municipalities and the province.

To fulfill this need a standard project scheme has been set up to standardize the project process as much as possible. This set-up has been taken up as the standard in which the project will be worked out.
This standard project is divided in three phases:
1.   Preparation
2.   Workshop
3.   Reporting

Phase 1: Preparation
The purpose of this phase is to prepare the workshop that will be held in phase two. For this workshop a presentation will be prepared specific for the municipality at hand. Based on the 'Klimaateffectschetsboek' (Climate impact sketchbook) the impact of climate change will be explained and made tangible for people participating in the workshop. The presentation, in which the consequences of climate change are enumerated, is the basis of what will later become a full-blown adaptation agenda specified to the specific needs of the municipality.
The civil servants who will take part in the workshop will also prepare on the subjects of climate change and climate change adaptation. This is not a deep introduction but superficial, just so they know what they will be talking about.

22

Phase 2: Workshop

The workshop is the moment during which the public servants will be working with the National AdaptationScan. While working with the AdaptationScan, opinions will be formed of what possible measures will and will not work for the municipality.

A group of 10-12 civil servants, preferably department managers, will be taught how to work with the AdaptationScan. An important condition is that they have thought about climate change and climate change adaptation in the municipality.

The workshop exists of an introduction to the AdaptationScan. Also, the general level of knowledge will be assessed and complemented if necessary.

Two sessions of working with the AdaptationScan and feedback will be held. During these sessions, the actual working with the AdaptationScan takes place. These working sessions are meant to give an idea on possibilities for measures to form policy and to discover the strong and weak points of existing adaptation policy. During the feedback moments the direct results, the best possible measures, will be discussed.

As a conclusion the wishes and results of the participants and the workshop will be summed up. These will form the basis of phase three.

Phase 3: Reporting

During the third and final phase, the actual agenda will be set. The results of the workshop, the wishes and results and the possible adaptation measures will be prioritized. The result is a report in which choices are named and linked to a substantiated proposal.

5.3   Recommendations

Maintenance and updates

The AdaptationScan should at any time present the state-of-the-art scenarios, scientific knowledge and evidence-based effective measures. This means that the databases should be updated on a regular basis:

- An input module for climate changes, effects of climate changes, adaptive measures and relations. This way the latest developments can be added to keep the AdaptationScan up to date. The body of knowledge on climate change effects is rapidly growing. Regular updates of this knowledge in the AdaptationScan database are essential. Also scores could be added to the extent in which a measure counteracts a climate change effect

- The same goes for adaptive measures. Some knowledge fields (e.g. water management) are well developed. Other fields (health, ecology, city heat) are still in its infancy regarding effective adaptive measures. New measures pop up continuously, but the effectiveness of many has still to be proven

- Interactions and feedbacks between effects, effects and measures and measures between themselves is also a knowledge field that is still in its early stages

All this implies a rather labor intensive (and costly) updating and maintenance procedure. Currently there is no such provision, which is a major threat to the viability of the instrument.

Potential commercial use of the Scan
- Reference book of knowledge providers - 'yellow pages' for experts on specific climate change effects (e.g. heat stress, water flow modeling, ecosystems, health threats, and so on)
- Reference book of measures and solutions - 'yellow pages' for solution providers (e.g. green roofing, building solutions, water infiltration, floating buildings, heat storage, shading, heat resistant building, water storage solutions, climate robust crops, and so forth)

Climate changes Spatial Planning

Climate change is one of the major environmental issues of this century. The Netherlands are expected to face climate change impacts on all land- and water related sectors. Therefore water management and spatial planning have to take climate change into account. The research programme 'Climate changes Spatial Planning', that ran from 2004 to 2011, aimed to create applied knowledge to support society to take the right decisions and measures to reduce the adverse impacts of climate change. It focused on enhancing joint learning between scientists and practitioners in the fields of spatial planning, nature, agriculture, and water- and flood risk management. Under the programme five themes were developed: climate scenarios; mitigation; adaptation; integration and communication. Of all scientific research projects synthesis reports were produced. This report is part of the communication series.

Communication

Adequate dissemination of knowledge can take place only if there is a closely-knit network between researchers and end users. Climate changes Spatial Planning created this knowledge network and monitored conditions to ensure it functions properly. Knowledge was made available to a wider audience and translated so that it can be used to better support national policy-making. Specific products included a website, conferences, workshops, brainstorming sessions, visits by foreign experts and a front office.

www.climatechangesspatialplanning.nl