

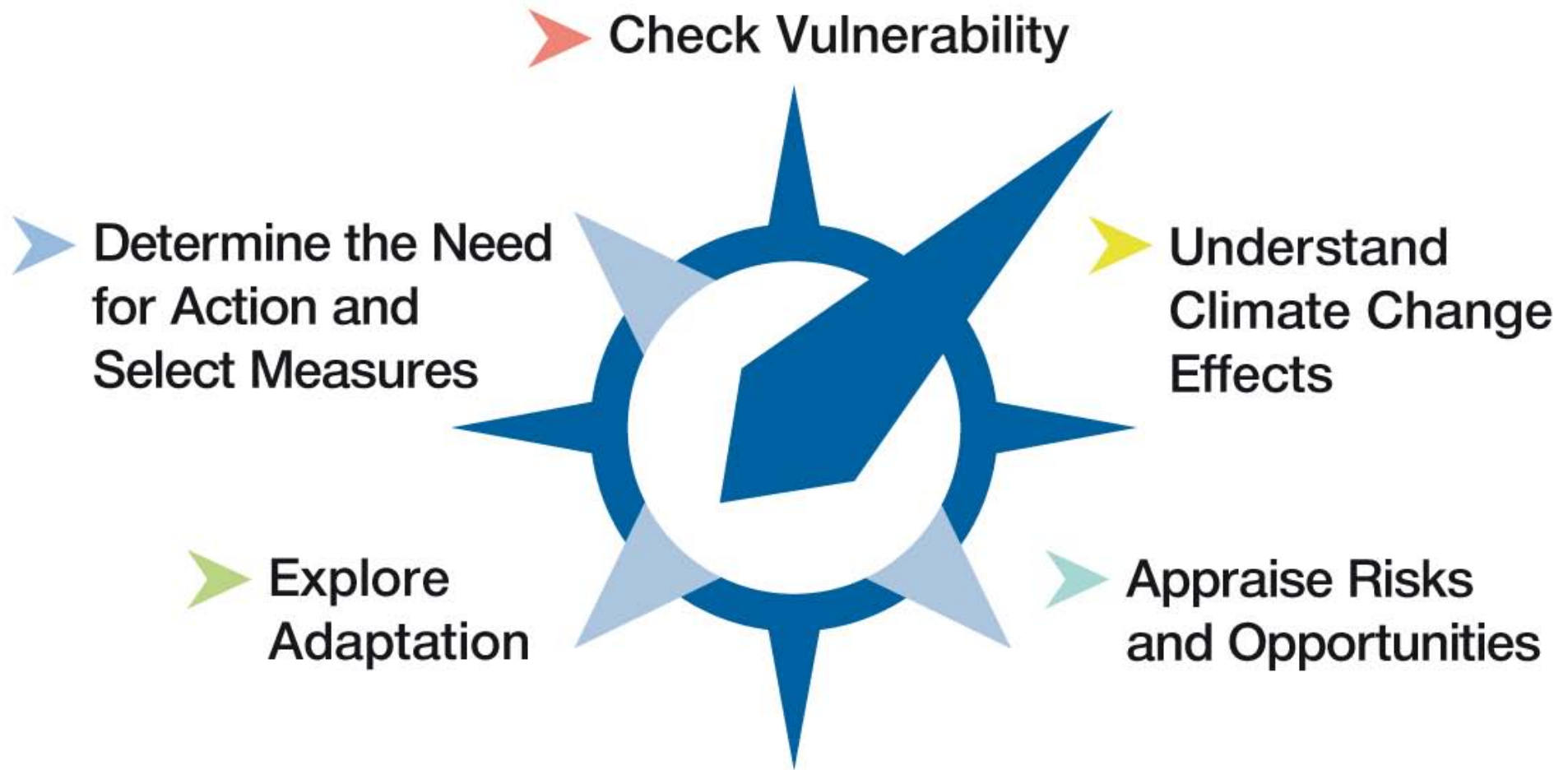


Joint tool for joint solutions: the “Future Cities Adaptation Compass”

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The “Futures Cities Adaptation Compass”





Why?

- Adaptation needs and measures?
- Sector approach vs. integrated cross-sector view
- Complex urban structures: Opportunities and pitfalls
- Synergies and/or conflicts with other adaptation measures other sustainability aims

 **Enable cross-sector view**





Who is the Compass for?

- Planners and experts at cities/water boards - Future Cities partners and similar organisations
- Applicable for: region, city, area, department
- Stimulate cooperation between professions and departments
- Check across sectors and interlink different stakes






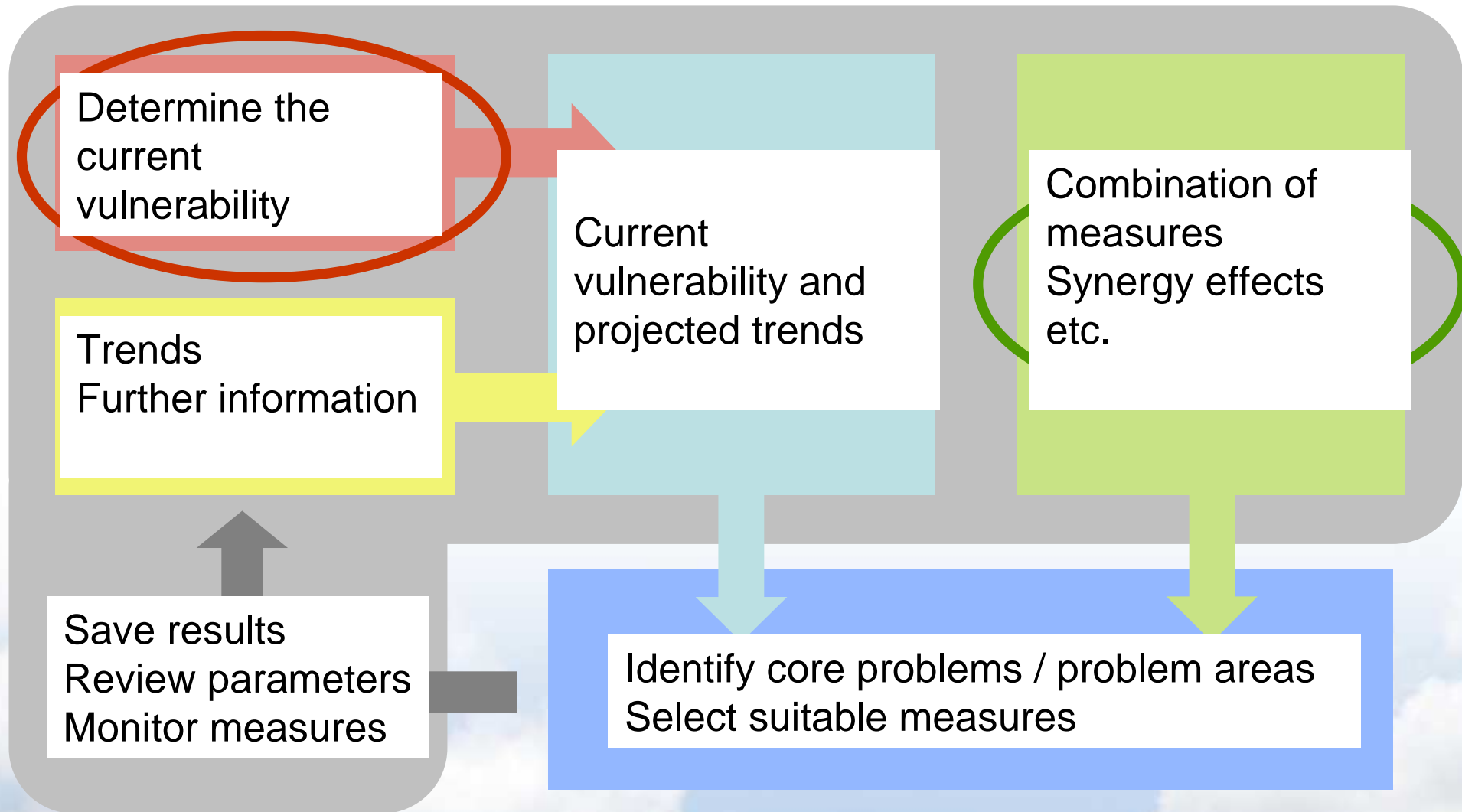
Aims of the Adaptation Compass

Guidance through the process:

- Identify, evaluate, document, discuss - Need for action for adaptation measures
- Find, choose - effective /efficient measures
- User-friendly handling: Computer-aided guide with pre-filled sections /background information and input forms



Select	Receptors	General weather se	
		Weather / climate parameter	Pote
<input checked="" type="checkbox"/>	Public health / vulnerable groups 	Heat	-Death -Spres -Altere -Heat :
		Extreme cold	-Injure -Spres
		Heavy precipitation / Floods	-Injure -Spres infectio





Check Vulnerability




➤ Check the **current** vulnerability for a city region or parts of a city

➤ Guide the user:

- Is the city / the quarter **sensitive** to flooding, heat waves, others?
- Who or what is **exposed** to the weather/climate problem? (people's health, trains, business... EVERYTHING?)
- Where does this happen?

➤ Local information can be collected and is filled in tables

Select	Receptors	General weather sensitivity of receptor		Who / Whom
		Weather / climate parameter	Potential effects	
<input checked="" type="checkbox"/>	Public health / vulnerable groups 	Heat	-Deaths, mainly due to cardiovascular diseases -Spread of vector-borne and infectious diseases -Altered allergic pattern -Heat stress	elderly people, people
		Extreme cold	-Injured and deaths -Spread of respiratory and infectious diseases	Sensitive people, people
		Heavy precipitation / Floods	-Injured and deaths -Spread of diseases due to contaminated water (mainly infections)	all people
		Storm		



List of receptors

Population		Public health/ Vulnerable groups
Infrastructure		Transport; Electricity and heat services; Water and Sanitation services; Social infrastructure
Built environment		Building stock; Urban texture (built materials)
Economy		Tourism; Industry; Retail
Natural resources		Green spaces; Water resources and quality; Air quality; Agriculture; Forestry; Biodiversity

Select receptors of interest



Explore Adaptation Options

- General information:
Categories of measures: short description



- Detailed information:
Types of measures: detailed description



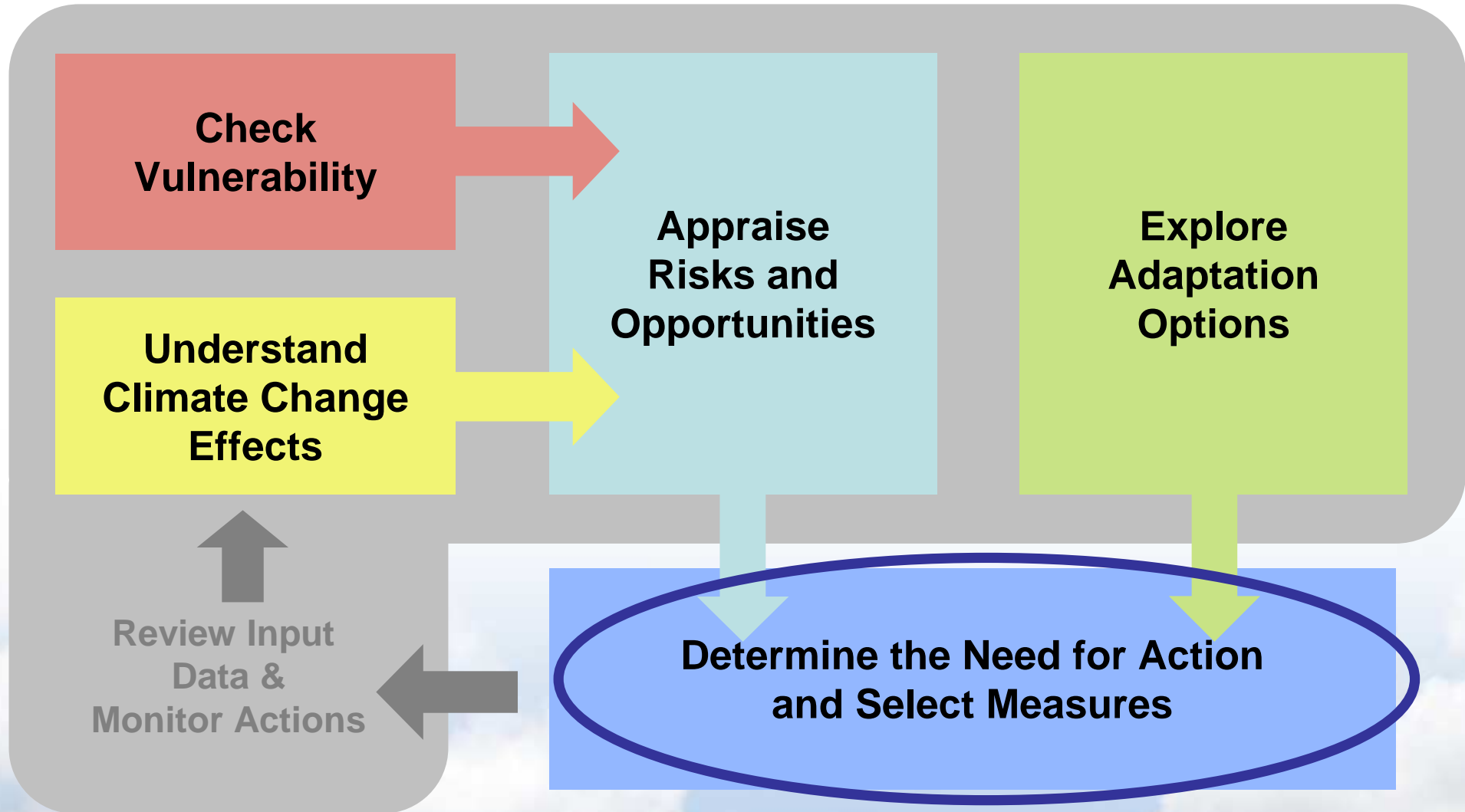
- Specific information:
Experiences from implementation



- Always:
Show links between types of measures
Positive – negative effects on other measures / adaptation needs



The “Futures Cities Adaptation Compass”





Determine Need for Action and Select Measures

Finally...

- The user knows about
 - vulnerable groups and sectors
 - the climate change impacts on these receptors (trends)
 - the risks and opportunities that arise
 - possibilities for adaptation and combination of measures

- The module doesn't provide ONE solution...

but

- A summary of information collected for the Compass
- A list of suitable measure and
- Guidance on how to choose and where to implement





On this sheet you get some introductory notes on the structure of the Future Cities Adaptation Compass and on the contents of its modules. You can navigate to the different modules by clicking on the boxes...

How to use the compass:

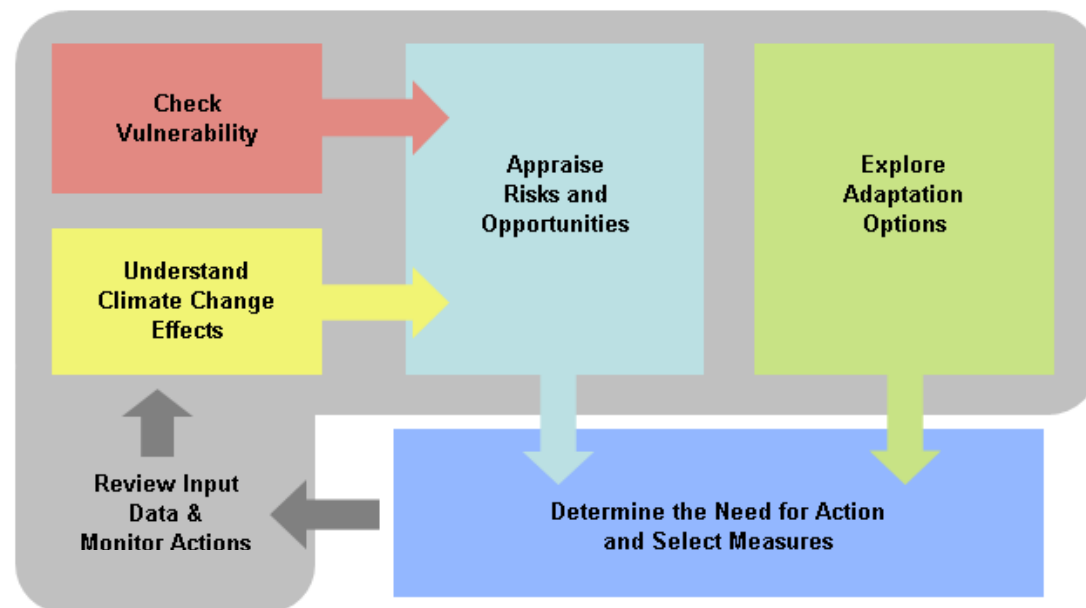
- X** Where to start?
It's up to you: if you have little or no knowledge about vulnerability, climate change projections and the risks and chances that arise,

Start with the Vulnerability Check

If you know about the vulnerabilities in your area, about the risks and opportunities of climate change and want to assess a planned or existing adaptation measure

Start to explore Adaptation

- X** Click on the module you want to work with; You can always come back to this page, to choose a new module or you work your way through from the Vulnerability Check to the Priorities for action...





The steps for checking your vulnerability are explained here. Read the text carefully before starting the assessment...

Vulnerability is known to be the degree to which a system is susceptible to and unable to cope with, adverse climate or weather induced effects. Vulnerability is a function of **sensitivity** (assessed in "Select Receptors" and "Former Events") and **exposure** (assessed in part "Spatial Relevance") of a receptor to the climate / weather effects and the **capacity to adapt** towards those conditions (assessed in "Check your vulnerability"). This definition differs from the definition of the IPCC which refers to climate change effects instead of integrating actual and observed climatic or weather related effects.

For the assessment of the current vulnerability of local physical features and socio-economic conditions - called receptors -, three steps have to be taken:

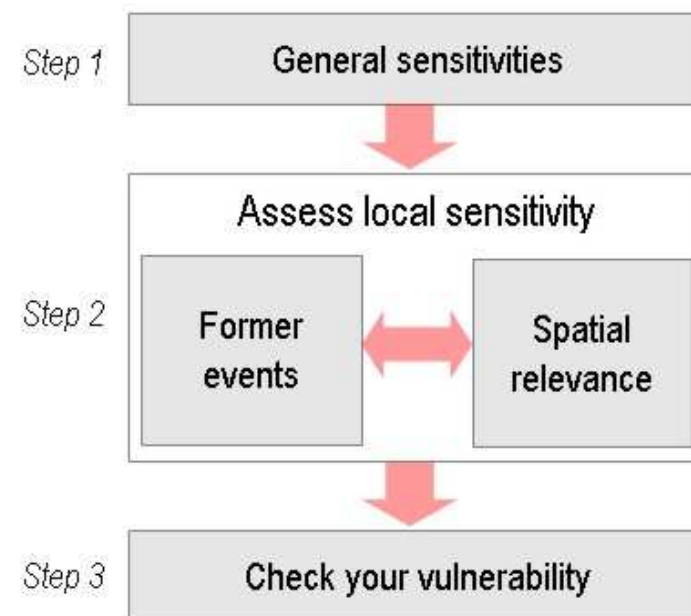
First you should take a look at the receptors and their sensitivities on the next page. As a **second step**, you need to assess your local sensitivity, i.e. fill in local information on a) former weather events and b) the local relevance of the receptors and their sensitivities.

To fill the tables might take some time and might require an intensive cooperation with different departments of your institution. Please read the guidance very carefully and take your time... the more comprehensive your collection of former events and spatial relevance is, the better your choice of adaptation measures can get. The information you fill in the table "Spatial relevance" will also be used to choose the adaptation measures suited best for your city / region.

In a **third step**, you can finish your vulnerability check by reviewing the capacity to adapt of each receptor and the vulnerability classes given in the Result sheet. Keep in mind the local information you have just collected;

Finally, before going on to one of the other modules, you can get an overview of the vulnerabilities assessed for your region in the output sheet. There is also the possibility to print the output - in order to show it to colleagues etc.

Go to other module:



How to fill the table:

Specific event: Add date or year of event (e.g. heat wave Aug 2003)

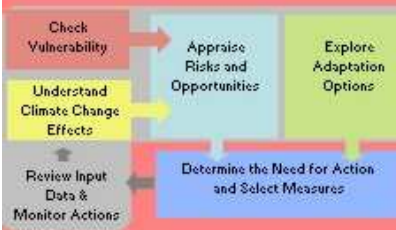
Direct impact: Please add a description of the direct impacts of the event (e.g. temperatures up to 35 degrees for more than 5 days)

Consequences: Add a description of indirect impacts (e.g. heat stress, mortality rate increased)

Responses taken: If applicable, add a description of responses that were taken after the event and the outcome of the measures. Were they successful?

Location: Add the names of the city quarters, regions, streets etc. affected of the specific event

Go to other module:



Please fill the experiences of your city / region regarding past weather events. This is an important part of assessing the vulnerability of your region. Use one row for each event; to add more rows please use the button "add more rows" on the right.

Add more events

If you want to know more about vulnerability assessment or learn about ways to gather the relevant information on former events, please click on Guidance.

Specific event	Direct impact	Consequences (indirect impacts of events)	Responses taken	Receptors affected <double click to select>	Location
Heat / Heat wave					
Example: 01.08.1999	Heat, 2 weeks 40 degrees	- Trees in public green spaces died, - problems with streets (melting tar), - extreme temperatures in buses/trains, - high mortality, esp. elderly people	- Planted only heat and drought resistant trees; - air-conditioning in some buses & trains - heat warning system established	Public health / vulnerable groups , Transport, Green spaces, 	Everywhere in the city, but most problems in the center
Drought					
Heavy precipitation / Floods					
Extreme cold					
High winds / Storm					
Others					



How to use the table:

Now, after assessing your local sensitivity by filling the tables on former events and spatial relevance, you should be able to check the current vulnerability in your city / region. But first of all, select your receptors.

The capacity to adapt and the vulnerability is pre-filled for each receptor;

If the pre-set adaptive capacities and vulnerability classes don't apply in your region / city you should change them to another category (just click on them).

If you are not sure about the categories, please review your collected local sensitivity assessment and talk to specialists in your region / city.

Go to other module:



Select	Receptors	General weather sensitivity of receptor			Class of vulnerability	
		Weather / climate parameter	Potential effects	Capacity to adapt		
<input checked="" type="checkbox"/>	Population	Public health / vulnerable groups	Heat	-Deaths, mainly due to cardiovascular diseases -Spread of vector-born and infectious diseases -Altered allergic pattern -Heat stress	medium	high
			Extreme cold	-Injured and deaths -Spread of respiratory and infectious diseases	medium	medium
			Heavy precipitation / Floods	-Injured and deaths -Spread of diseases due to contaminated water (mainly infections)	low	high
			Storm	-Injured and deaths	medium	high
<input checked="" type="checkbox"/>	Transport		Heat	-Damages -Changes in behaviour pattern / demand -Air quality problems -High maintenance costs	low	low
			Extreme cold	-Damages -Changes in behaviour pattern / demand -High maintenance costs	low	high
			Heavy precipitation / Floods	-Damages	low	high
			Storm	-Damages	low	high
<input type="checkbox"/>	Electricity and heat services		Heat	-Damages -Altered load peaks / demand -Efficiency changes -Cooling problems -High maintenance costs (mainly own consumption)		
			Drought	-Cooling problems -High maintenance costs (e.g. environmental requirements)		
			Extreme cold	-Damages -Altered load peaks / demand		
			Heavy precipitation / Floods	-Damages / failures		

In this module you can find adaptation measures according to different criteria, which range from type of measure or scale to target group. For each measure information is provided on three levels:

General: for each category of measures (e.g. green structure) a short description is provided.

Detail: background information on each type of measure (e.g. green roof or urban green space) is given.

Specific: Examples of implementation within the Future Cities partnership show best-practise experience.

Go to other module:



On the following pages you will get an overview of different categories and types of adaptation measures.

The catalogue is structured as follows:

General information: Categories of measures with short description



Detailed information: Types of measures with detailed descriptions



Specific information: Experiences from implementation: specific examples



Here you can preselect measures with the following criteria:

When you finished your selection press on the FILTER button.

If you want to read about all measures, check the box VIEW ALL MEASURES

Filter:

Category and type of measure

- show all
- green structures
- water systems
- energy efficiency and mitigation
- urban structure
- awareness measures
- others

Spatial scale of measure

- show all
- region
- city or town
- urban quarter or street
- building level

Synergies & conflicts

- show all
- only measures with synergies
- only measures without conflicts

Target groups

to be added during development of the compass

Filter

View all measures:

View all measures



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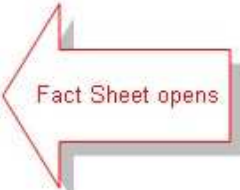
Go to other module:



Topic

Green roofs

Name of measure	Future Cities key component			Country	Location	
	Green structure	Water system	Energy efficiency / mitigation			
Green roofs	X		X	Netherlands	City region Arnhem-Nijmegen	read more
Green Roof de Tweeling	X	X		Netherlands	De Tweeling Kindergarten	<i>read more (pdf opens)</i>
Green roofs	X			Netherlands	City centre of Nijmegen	<i>read more (pdf opens)</i>
Green roofs	X	X	X	Netherlands	Tiel East, industrial area Latenstein	<i>read more (pdf opens)</i>
Green and brown roofs	X	X		Great Britain	Hastings, East Sussex	<i>read more (pdf opens)</i>



To learn more about the implemented measures, click on read more... A description of the location, the implementation process and the lessons-learned is provided as Fact Sheet for each measure.



Road map to final version

- Tested by Future Cities partners
- Commented on by members of advisory pool

- Confirms the direction “on the right way”
- Emphasises the importance of the cross sector approach - Work together...
Combination of measures, incl. mitigation

- Final version publicly available end of 2012





The Future Cities
Adaptation Compass
thanks for your attention!

Comments and
suggestions are welcome!

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