### **Sectors**



Water and spatial management



Health



**Energy** 





Agriculture, horticulture and fisheries



Infrastructure (air, road, rail, water)



Safety and security

### Climate effects demanding urgent action



- More heat stress caused by extreme weather conditions:
  - Greater morbidity and mortality, more hospital admissions, reduced productivity.

Recreation and tourism

- Increase in incidence of skin cancer.









- More frequent failure of vital and vulnerable functions due to extreme weather conditions:
  - Energy, telecommunications, IT and the water supply system.
  - Transport: the main infrastructure.



- More frequent damage to crops or production resources due to extreme weather conditions:
- Lower crop yields and/or reduced quality due to rain, storms, hail or saturated soil.
- Damage to production resources such as glasshouses and buildings caused by hail, storm or lightning.
- Lower crop yields and/or reduced quality due to extended periods of drought and in the absence of adequate irrigation.
- The more extreme the weather conditions, the more difficult it will be to anticipate and take precautionary measures.



- Shifting climate zones further to gradual climate change: the resilience of nature under strain:
- Changes to the composition of flora and fauna: native species will be lost while new species will establish themselves.
- Some new species may pose a threat to economic activity, to human or veterinary health, or to biodiversity.
- There may be 'mismatches' within the food chain.
- The rise in sea level will place the existing nature of the estuary (delta) region under pressure; habitats will be eroded or lost altogether.



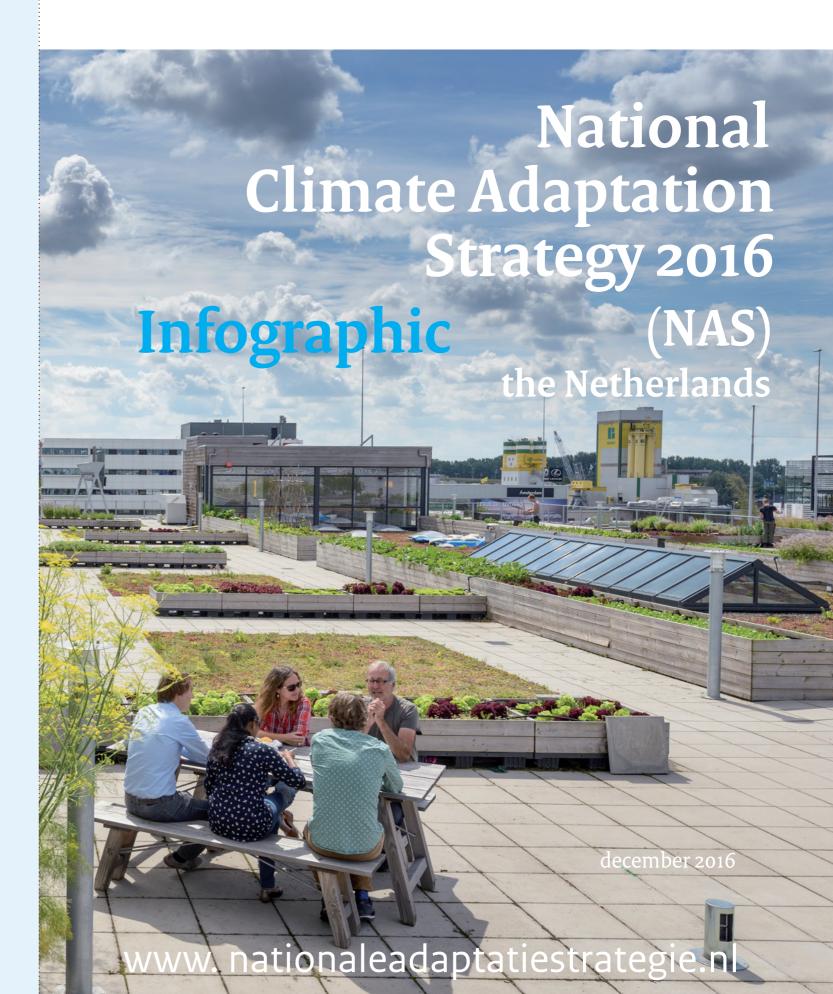
- Increased health burden, lost productivity and higher costs due to potential increase in allergies and infectious diseases:
  - Possible increase in the prevalence of allergies such as hay fever and other respiratory conditions.
  - Possible increase in exposure to waterborne pathogens due to growth in water recreation and deterioration of water quality.
  - Possible increase in vector-borne infectious diseases.



#### **Cumulative effects:**

- Effects whereby failure or disruption in one sector or at one location leads to further failures or disruption elsewhere.

# Adapting with ambition



# **Dutch National Climate Adaptation Strategy (NAS)**Adapting with ambition

The National Climate Adaption Strategy shows the effects of climate change in the Netherlands and the high impact risks that urgently need to be addressed. The approach is to launch new adaptation initiatives and to support and accelerate existing adaptation initiatives and practices. The national government wants to cooperate with local governments, industry and citizens to invest in these practices and in the development of policies and research that firmly support them, in order that the Netherlands will soon be adequately prepared for climate change.

Agriculture, horticulture

and fisheries

Nature

spatial management

Health

Wetter

(rainfall)

Rising

Sea Level

## 4 climate trends effect 9 economic and social sectors

and security

Warmer

Drier

Infrastructure

IT and

telecommunications

Energy

#### Climate-proofing: a joint undertaking





 increase awareness of the necessity of climate adaptation



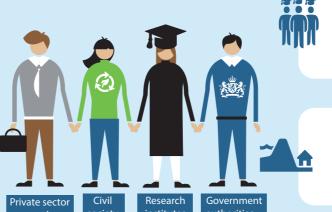
 encourage the implementation of climate adaptiaton measures



6. monitor the progress and effectiveness of the adaptation strategy



5. embed climate adaptation within policy and legislation



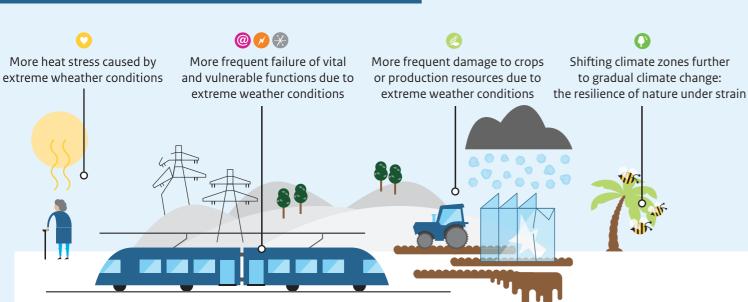
develop and exploit the knowledge base

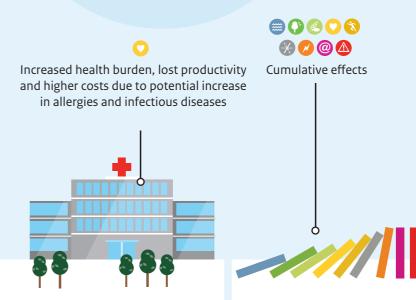
4. address urgent climate risks

### Climate effects demanding urgent action

Recreation and Tourism







The Implementation Programme Climate adaptation:



"The Dutch national government calls the regional governments, industry and citizens to a joint investment in policy, research and measures in order to adequately adapt the Netherlands to the effect s of climate change."



Climate change mitigation refers to the efforts to reduce or prevent emission of greenhouse gases that causes a worldwide increase of temperature. Adapting to climate change refers to the adaption of the environment to the consequenses of climate change. Mitigation and adaption are complementary. We need both: preventing the increase of temperature as well as measures to adapt the environment to the consequenses of climate change.



### A decade of climate adaptation policy in the Netherlands

'17	Ŷ	Start of the Climate Adaptation Implementation Programme
'16		Publication of the Climate Adaptation Strategy
'15		PBL Netherlands Environmental Assessme Agency and 'Knowledge for Climate" prov the knowledge base for Climate Adaption S
'14	þ	Ratification of the 5 "Delta Decisions"
'13		The government adopts the Climate Agence
'12		National Court of Auditors advises broad approach Climate Adaptation
'11		
'10		Start "Delta Programme"
'09	þ	
<b>'</b> 08	\ \	
<sup>'</sup> 07		First Dutch Climate Adaptation Strategy