# PURPLE AND PERI-URBAN CLIMATE CHANGE

purple

peri-urban regions platform Europe

**Brno, June 2018**

# Beginnings

- Climate change - a strange omission?!
- A land use starting point ….. Implicit references:
- “In peri-urban areas the amount of open space is diminishing and the quality of the environment, of biodiversity and landscape is under serious threat”
- “Sustainable open space will be addressed in a multi-disciplinary manner, taking into account natural, economic, social and cultural policy aims”

# November 2009

- ‘Europe’s peri-urban potential: beyond urban-rural links’
- “Climate and resource challenges require drastic action”. (EU 2020)
- Van den Brande’s – three interrelated themes
- The “triple threat”
- ” the prominence given to climate change”
- Concluding questions

# Shaping the PURPLE challenge 2009-11

1. How can we effectively and quickly adapt to climate change?
2. What policies do we need to arrest the adverse impacts on our fragile peri-urban environment – air, soil, biodiversity?

# The PLUREL dimension

- **Climate impacts** on the peri-urban
  - Climate impact projections:
    - Water
    - Ecosystems
    - Extreme weather events

- Droughts and extreme heat periods
- Flooding and extreme weather events
- Soil erosion and landscape structure degradation
- Invasive species and habitat decline

# The PLUREL dimension

- **Climate mitigation in peri-urban areas:**
  - New forms of renewable energy and distribution
  - As oil prices rise, and carbon policies take effect, pressures for higher densities & clustered settlements
  - policy pressure for attractive and high quality inner cities, to avoid outward migration
  - Protection of carbon sinks and storage capacity

# The PLUREL dimension

- **Climate adaptation in peri-urban areas:**
  - Redesign of built environment for climate impacts (heat, drought, storms, flooding, sea level increase)
  - Protection of critical infrastructure
  - Avoidance of high flood risk / other hazards
  - Green infrastructure, open space design, ecological connectivity

# Peri-urban climate and water

Regio Randstad

Purple

Background paper for the PURPLE conference on 26 May 2010

**'Fostering biodiversity and sustainable water management in peri-urban regions, a new CAP to face new challenges'**

**Water and agriculture in peri-urban areas**

Authors: Twan Tiebosch (Esplanada), Jeroen van Herk (LINKit consult)

**Summary**
This paper deals with the subject of sustainable water management and climate change in peri-urban regions. It underlines the changes already surrounding us, and points out what aspects of agriculture in peri-urban regions could be affected. As most of the impacts of climate change on agriculture will come through water management, it is crucial to understand its impacts and be able to anticipate. More than creating adversaries competing for grounds, agriculture could very well present itself as an ally of urban areas. Some examples are given how this could be looked upon and organised (water governance), thus anticipating the Conference discussions on these aspects.

## 1. Short overview of relevant EU-legislation

There is an number of EU-directives relevant in the case of water management in peri-urban areas (focussing on spatial aspects of water policy): the Energy Directive [4][1], the Water Framework Directive [7], the Groundwater Directive [8], the Nitrate Directive [9] and the Floods

From an agricultural point of view, several impacts are expected:

- **Water shortages**. The annual water availability will decrease in many parts of Europe. The differences between regions is strong: in southern Europe this will be a year round effect; in the northerly regions merely a summer effect. Climate change will cause significant changes in the quality and availability of water resources. More than 80% of agricultural land is rain-fed. Limited water availability already poses a problem in many parts of Europe and the situation is likely to deteriorate further due to climate change, with Europe's high water

- **Weather hazards**. The impacts of extreme weather conditions like storm events, floods, hail, heat waves and drought will be felt stronger throughout Europe;
- **Increased pest problems**. Due to higher temperatures and humidity it is likely that farmers will face increased pest problem, or more pests;
- **Impact on crop yields and distribution**. The stability of crop yields will be less assured and production locations will change as agro-climatic zones are likely to shift to more northern latitudes [1].
- **New production possibilities.** Climate change has also a positive side as it leads to new production possibilities of crops which need a warmer climate.

In short, circumstances for farmers are changing, with higher risks for existing crops and new challenges to address these risks.

# Peri-urban climate and water

## 5. Agricultural water management in peri-urban areas

Where urban and rural areas are closely connected, the impacts of climate change on water management can be considerable. In the current situation, the urban pressure (housing, industry and infrastructure) of an expanding city on agriculture is high, causing high land prices. Consequently, a competing claim could very well arise between agriculture trying to adapt to changing conditions and expanding urban areas, leading to even more higher land prices in the near future, creating a great pressure on returns on agricultural investment.
All additional spatial pressure that arises from climate change is therefore primarily regarded as a potential threat to the future of agriculture in peri-urban areas. For instance, the main centres of green house production in the Netherlands (such as 'Westland ' and 'Aalsmeer') suffer from a lack of space for scaling up. This effect is found in all peri-urban areas, as there is not just a high spatial stress, leave alone too little space for the needed extra water retention, albeit that differences may occur between PURPLE-members. It provides a challenge for this agricultural industry, the Regional Government and Waterboards to develop a sustainable solution for this problem.

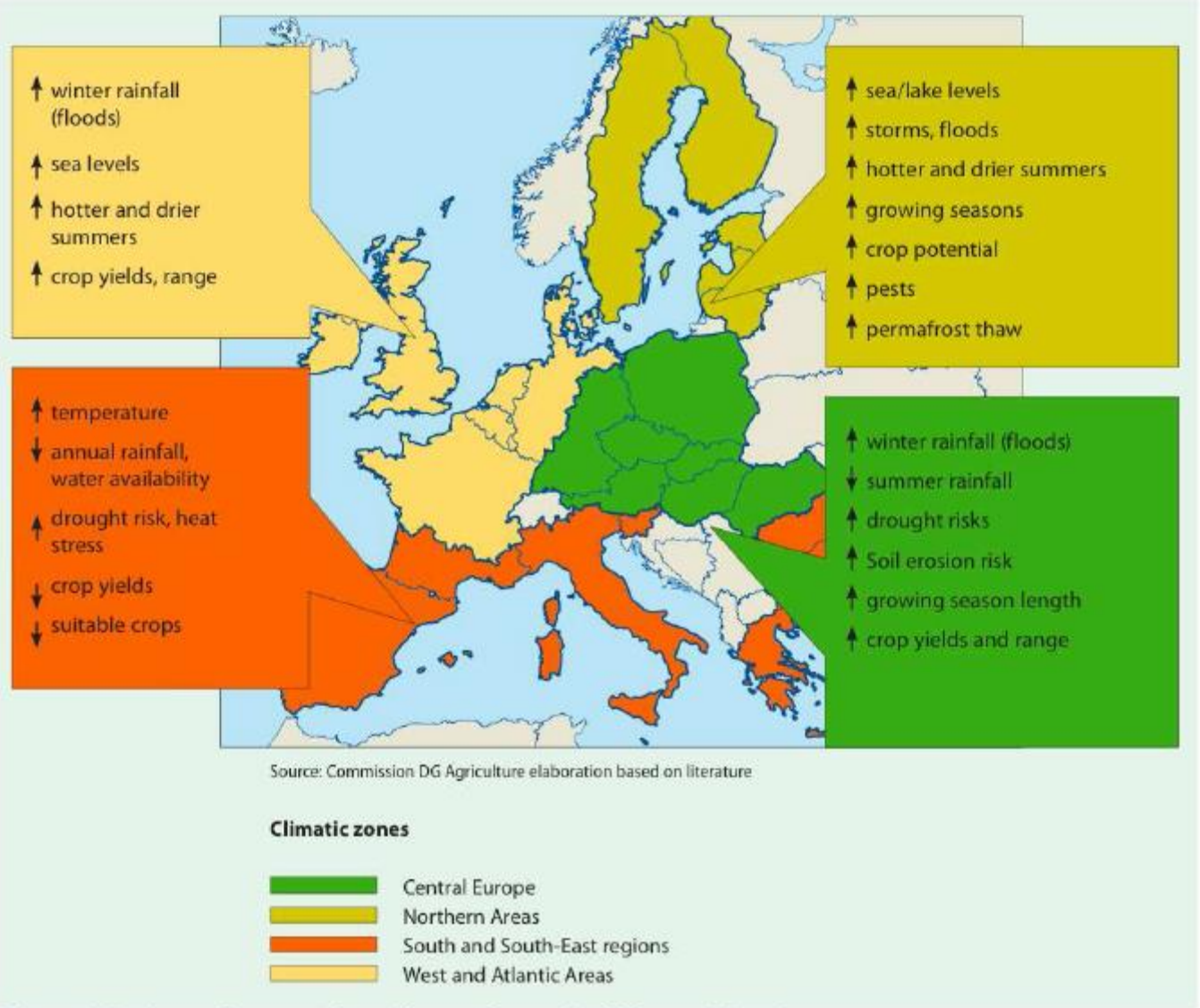


**Figure 1 Projected impacts from climate change in different EU regions**

# Topic Paper: climate change and peri-urban areas

- “The objectives of multi-functional land use and social cohesion need to be fitted to the objectives of climate adaptation and mitigation”
- “Peri-urban areas contain both urban and rural characteristics and are thus vulnerable to climate change impacts (associated with) both types. …. These same areas are ideal locations for innovation and experiment in terms of adaptation and mitigation”

# Topic Paper: climate change and peri-urban areas

- Climate impacts in peri-urban areas:
  - Drought and extreme heat periods
  - Flooding and extreme weather events
  - Sea level rise and salat water incursion
  - Soil erosion and landscape degradation
  - Invasive species and habitat decline
- Against a peri-urban setting characterised by:
  - Urban pressure
  - Lack of space
  - Agriculture and food production

# Where we are today

- The EU's "broader commitments" - Paris and SDGs
- 2021-7 Budget
- Proposed regulations "Reflecting the importance of tackling climate change"
- "the Funds will contribute to mainstream climate actions and to the achievement of an overall target of 25 % of the EU budget expenditure supporting climate objectives".

# A look forward

- Newer and fewer Priority Objectives for Cohesion Policy
- PO2: "a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, **climate adaptation** and risk prevention and management“
  - Specific Objective iv: Promoting climate change adaptation, risk prevention and disaster resilience
  - Specific Objective v: Promoting sustainable water management
- Operations under the ERDF are expected to contribute 30 % of the overall financial envelope of the ERDF to climate objectives
- Operations under the Cohesion Fund are expected to contribute 37% of the overall financial envelope of the Cohesion Fund to climate objectives

# A look forward

- 035 Adaptation to climate change measures and prevention and management of climate related risks: **floods** (including awareness raising, civil protection and disaster management systems and infrastructures)
- 036 Adaptation to climate change measures and prevention and management of climate related risks: **fires** (including awareness raising, civil protection and disaster management systems and infrastructures)
- 037Adaptation to climate change measures and prevention and management of climate related risks: **others, e.g. storms and drought** (including awareness raising, civil protection and disaster management systems and infrastructures)

# And in the meanwhile …

- Horizon 2020
  - *Chapter 9. Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy*
  - Chapter *12. Climate action, environment, resource efficiency and raw materials*

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|---|---|---|---|
| SC5-14-2019: Visionary and integrated solutions to improve well-being and health in cities | IA | €10mill | 19/02/2019 |
| SC5-13-2018-2019: Strengthening international cooperation on sustainable urbanisation: nature-based solutions for restoration and rehabilitation of urban ecosystems (CELAC) | RIA | €5mill | 19/02/2019 |
| LC-SFS-19-2018-2019: Climate-smart and resilient farming, B. [2019] Efficiency and resilience of mixed farming and agroforestry systems | RIA | €14mill | 23/01/2019 |

# Thank you for your attention

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