

**Background document**  
**Break-out group 2 (21 June): Sectoral adaptation - Agriculture, Energy,  
and Disaster Risk Reduction**

**Recent policy and knowledge developments**

**The Agriculture sector** contributes to climate change through the release of greenhouse gases and land use change, but it is directly affected by climate change as farming activities depend on climatic conditions. [The Common Agricultural Policy](#) (new CAP 2014-2020) offers a number of instruments to find adequate answers to the challenges of climate change, a more sustainable EU agriculture. Sustainable management of natural resources and climate action therefore represent one of the three main objectives of the CAP. A substantial amount of 25% of the total CAP budget in 2014-2020 is related to climate change mitigation and adaptation action. [The EU Strategy on Adaptation to Climate change](#) (published as communication in 2013) focuses on three objectives and eight actions. Action 6 links climate change to CAP with the focus on climate-proofing of the CAP. On the knowledge developments various projects and programmes in Europe have addressed climate change impacts and adaptation, for example *AVEMAC project* (by DG JRC and DG AGRI), *Cost of Climate extremes*, *Mainstreaming climate change into rural developments*, the *FP7 and H2020 projects* (Modextreme, AnimalChange, FATIMA), initiatives and international programmes like MACSUR and Copernicus Climate change Service, sectoral information systems (project AgriCLASS).

**The energy sector** is a large contributor to European greenhouse gas emissions, but also a sector with vulnerable infrastructure that needs to be prepared to adapt to climate change as many other services and sectors are dependent from it. On 30 November 2016, the Commission proposed a Regulation on the Governance of the [Energy Union](#). According to the proposed new rules, EU countries will be required to develop Integrated National Energy and Climate Plans that cover [the five dimensions of the Energy Union](#) for the period 2021 to 2030 (and every subsequent ten year period) based on a common template and to report on them.

In 2015 and 2016 several multilateral global frameworks addressing climate change adaptation (CCA), **disaster risk reduction (DRR)** and resilience to climate change were agreed at UN level such as the [Sendai Framework for Disaster Risk Reduction 2015-2030](#) (SFDRR), the [Paris Agreement on Climate Change](#) and the [Addis Ababa Action Agenda on financing for Development](#). The achievement of priorities for action and policy targets of SFDRR will be monitored by indicators that were developed by the Open-Ended Intergovernmental Working group (OEIWG) and endorsed by the UN General Assembly on 2 February 2017. The Paris Agreement put strong emphasis on adaptation and climate resilience in the context of sustainable development. Furthermore the European Union worked intensively on DRR by building a number of EU thematic legislations, e.g. the [EU Civil Protection Mechanism](#) and the [EU Action Plan on SFDRR 2015-2030](#), and on CCA by launching in 2013 the [EU Climate Change Adaptation Strategy](#). Recently JRC published its report on disaster risk management [“Science for disaster risk management 2017: Knowing better and losing less”](#).

**Background information EEA and ETC CCA activities**

***Agriculture***

Due to its link with climate, agriculture is the economic sector most susceptible to changes in climate patterns, with impacts highly specific for crop and place. Crop and livestock production are under pressure due to increased temperature, reduced water availability and quality, increased pests, diseases, fire risk, and wind damages. Combined effects of changes in temperature, rainfall and atmospheric CO<sub>2</sub> concentration influence crop yields and impacts are different for European regions. For example, climate change is expected to improve the suitability for growing crops in northern Europe and to reduce crop productivity in large parts of southern Europe. However, agriculture also

*11<sup>th</sup> EIONET workshop on Climate Change Impacts, Vulnerability and Adaptation,  
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contributes to climate change through the release of greenhouse gases (GHG). The sector is the fifth largest contributor to GHG emissions in the EU.

EEA plans to publish an assessment on climate change impacts and adaptation in agriculture sector in 2018. In 2017 we have been preparing a scoping paper addressing physical and economic impacts of climate change, describing policy framework for adaptation and presenting and presenting the measures to adapt agriculture to climate change.

### ***Energy***

The energy supply sector, including electricity production (power plants) and energy infrastructure (electricity transmission and distribution; transmission and storage of fuels), is becoming increasingly vulnerable to climate change (increasing frequency of heat waves, droughts, extreme precipitation, snow, icing, storms). Vulnerabilities of production include reduced efficiency and outputs of thermal power plants due to decreasing availability of cooling water and changed outputs from hydropower due to changes in precipitation. Vulnerabilities of infrastructure include e.g. decreased network capacity due to extreme temperatures, increased damages due to snow, ice and heavy precipitation, damages to pipelines due to melting permafrost, threats to coastal pipelines due to sea level rise. The shift to renewable energy technologies (wind, solar) and resources (e.g. biomass) and the increased interconnection between networks and electricity transmission lines may increase resilience and/or enhance the risks spreading across borders.

A new scoping activity, starting in 2017 at EEA, will shortly assess the available evidence making use of e.g. EU funded research and knowledge. The scoping project will identify key vulnerabilities (based largely on the CC impacts and vulnerability report published Jan. 2017) and key examples of implemented adaptation actions across Europe's different regions and various energy technologies and resources. The project will make use of Climate-ADAPT, which includes some information on [adaptation in the energy sector](#). The aim of the scoping study is to analyse scope and content of a possible future EEA report on energy and CC adaptation.

### ***Disaster risk reduction***

In September 2017 EEA will publish the report “**Climate change adaptation and disaster risk reduction in Europe. Enhancing coherence of the knowledge base and policies**” which will contribute to awareness and improvement of knowledge base, policy developments and implementation among decision-makers, policy and science experts and practitioners in both CCA and DRR communities. The report presents policies, methods and practices in CCA and DRR at European and national levels, addresses trends and projections in weather and climate related natural hazards and their impacts on socio-economic sectors and human health, shows good examples of coherence between CCA and DRR in Europe and presents opportunities where and how to enhance the coherence. The report also aims to be specifically of use for national policy development and implementation in EEA member countries and for the process of the European Commission's evaluation of the EU Climate Change Adaptation Strategy.

The report is based on the outcomes of *the survey* from February 2016 sent to all 33 member countries and to the six collaboration countries and the results from the *Workshop* with the experts from CCA and DRR communities in seven EEA member countries, European Commission (DG ECHO, DG CLIMA and DG JRC) and UNISDR.

### **Questions for the discussion**

#### ***General questions***

- How useful and relevant are the existing and planned EEA sectoral adaptation assessments (agriculture, energy, DRR) for your (assessment) activities at country level?

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- Do you have specific sectoral adaptation plans for the agriculture, energy and DRR sector (or sections in your National Action Plans)?
- What are your views on the relevance, scope and timing of the EEA work on sectoral assessments (agriculture, energy, DRR in 2017/2018 and potentially other sectors in the future)?

***Specific (sub-)questions***

- Which work areas and approaches within DRR could EEA focus on in future, taking into account the EEA report due to be published in 2017 and other recent European knowledge developments (e.g. the JRC report) and expected EU policy?
- How do you find the review (EIONET consultations) beneficial for you? Have you experienced any technical problems with using the talkback consultations?