



European Commission's Group of  
Chief Scientific Advisors

# Adaptation to health effects of climate change in Europe

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A magnifying glass with a black handle and a silver frame, positioned on the left side of the slide. The lens is focused on the text "#SAMGroup\_EU".

**#SAMGroup\_EU**

*INDEPENDENT  
SCIENTIFIC ADVICE  
FOR EU POLICIES*

Research and  
Innovation



Group of Chief Scientific Advisors



Scientific Advice



Better Policy making  
and Legislation  
Outcome for citizens



European Council



European Parliament

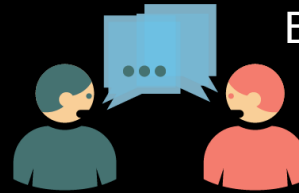


Proposals for Policy  
or Legislation

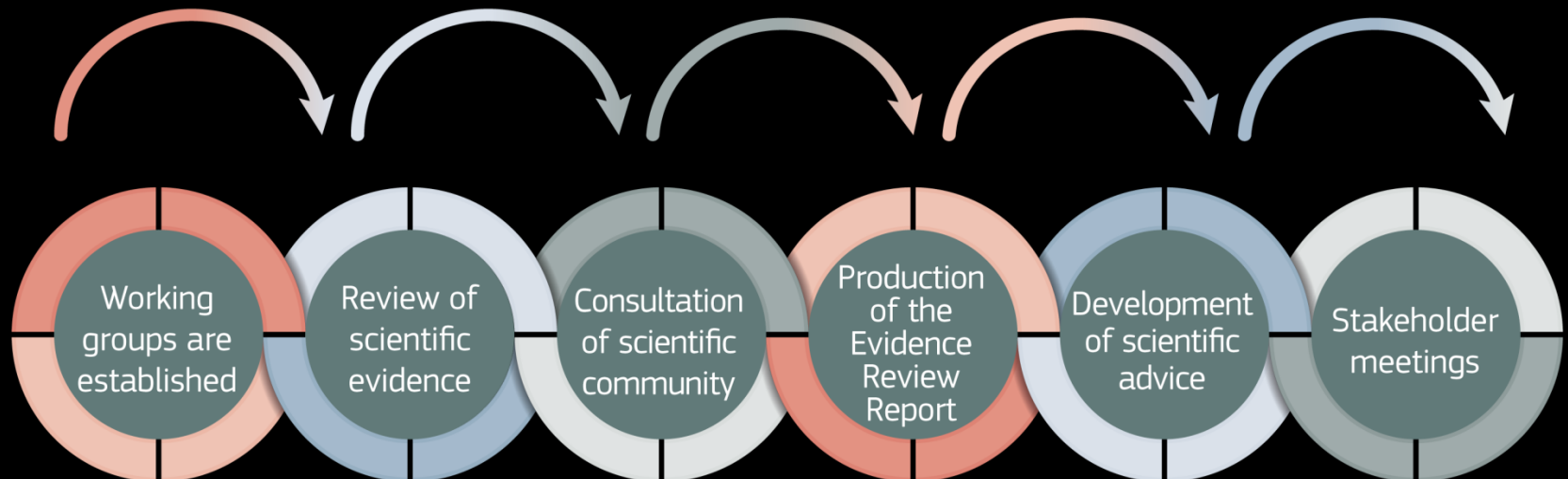
# Principles of scientific integrity and transparency



SAM uses only  
publicly available  
evidence



Both the science advice and  
the process for evidence  
gathering are public





European Commission

Scientific Advice Mechanism (SAM)

## Closing the gap

between light-duty vehicle real-world CO<sub>2</sub> emissions and laboratory testing

High Level Group of Scientific Advisors  
Scientific Opinion No. 1/2016

Scientific Advice Mechanism (SAM)

## Cybersecurity

in the European Digital Single Market

High Level Group of Scientific Advisors  
Scientific Opinion No. 2/2016

Scientific Advice Mechanism (SAM)

## Food from the Oceans

High Level Group of Scientific Advisors  
Scientific Opinion No. 3/2017

Scientific Advice Mechanism (SAM)

## Novel carbon capture and utilisation technologies

Group of Chief Scientific Advisors  
Scientific Opinion No. 4/2018

Scientific Advice Mechanism (SAM)

## EU authorisation processes of Plant Protection Products

Group of Chief Scientific Advisors  
Scientific Opinion No. 5/2018

Scientific Advice Mechanism (SAM)

## New techniques in Agricultural Biotechnology

High Level Group of Scientific Advisors  
Explanatory Note 02/2017

Scientific Advice Mechanism (SAM)

## Environmental and Health Risks of Microplastic Pollution

Group of Chief Scientific Advisors  
Scientific Opinion 6/2019

Independent Expert Report

Scientific Advice Mechanism (SAM)

## Statement by the Group of Chief Scientific Advisors A Scientific Perspective on the Regulatory Status of Products Derived from Gene Editing and the Implications for the GMO Directive

On 25 July 2018, the Court of Justice of the European Union (the Court) decided that organisms obtained by the new techniques of directed mutagenesis are genetically modified organisms (GMOs), within the meaning of the Directive 2003/18/EC on the release of genetically modified organisms into the environment (GMO Directive)<sup>1</sup>, and that they are subject to the obligations laid down by the GMO Directive.

New techniques of directed mutagenesis include gene editing such as CRISPR/Cas9 technologies. The legal status of the products of such techniques was uncertain, because it was unclear whether they fell within the scope of the GMO Directive.

These techniques enable the development of a wide range of agricultural applications and the ethical, legal, social and economic issues of their use are discussed extensively. The European Commission's Group of Chief Scientific Advisors (the 'Chief Scientific Advisors') recognises the complex nature of these debates, which touch upon people's beliefs, values, and concerns, as well as the underpinning science.

The mandate of the Chief Scientific Advisors is to provide scientific advice to the European Commission. Therefore, following our explanatory note on 'New Techniques in Agricultural Biotechnology' (SAM, 2017a), we have examined the GMO Directive taking into account current knowledge and scientific evidence.

On request by the French *Conseil d'Etat*, the Court was asked to determine whether organisms obtained by new directed mutagenesis techniques are exempt from the obligations imposed by the GMO Directive, as are those obtained by conventional, random mutagenesis techniques that existed before the adoption of the Directive, or are regulated like those obtained by established techniques of genetic modification (GMOs).

The Court declared that organisms produced by directed mutagenesis techniques/methods should be considered GMOs within the meaning of the GMO Directive and subject to the relevant requirements. In this regard, the Court concluded that only organisms obtained by insertion of techniques/methods of mutagenesis, which have conventionally been used in a number of

<sup>1</sup> Mutagenesis encompasses both random mutagenesis and directed mutagenesis. Random mutagenesis is also often referred to as conventional mutagenesis or traditional mutagenesis, whereas directed mutagenesis is often used to refer to 'targeted mutagenesis'. The Court clarified that 'directed mutagenesis' refers to the latter category.

13 November 2018

Scientific Advice Mechanism (SAM)

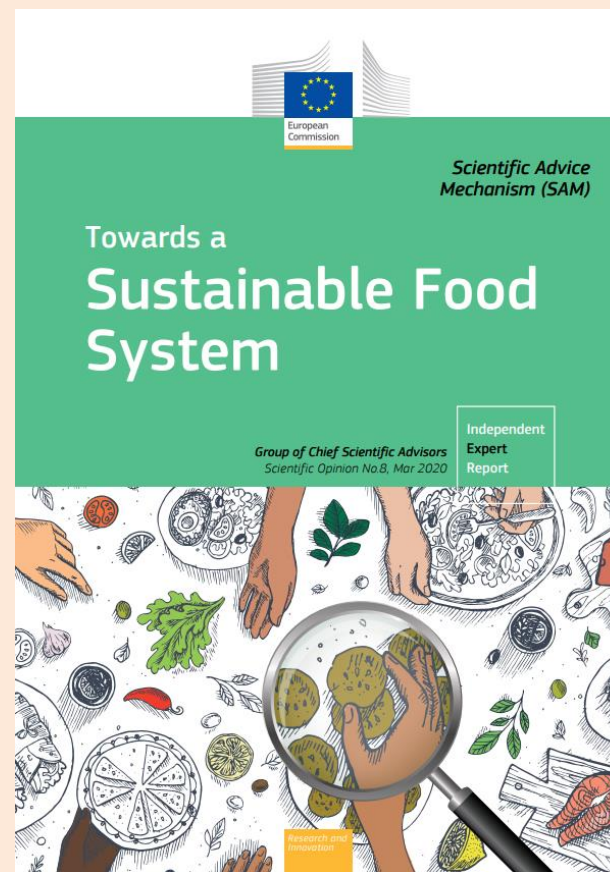
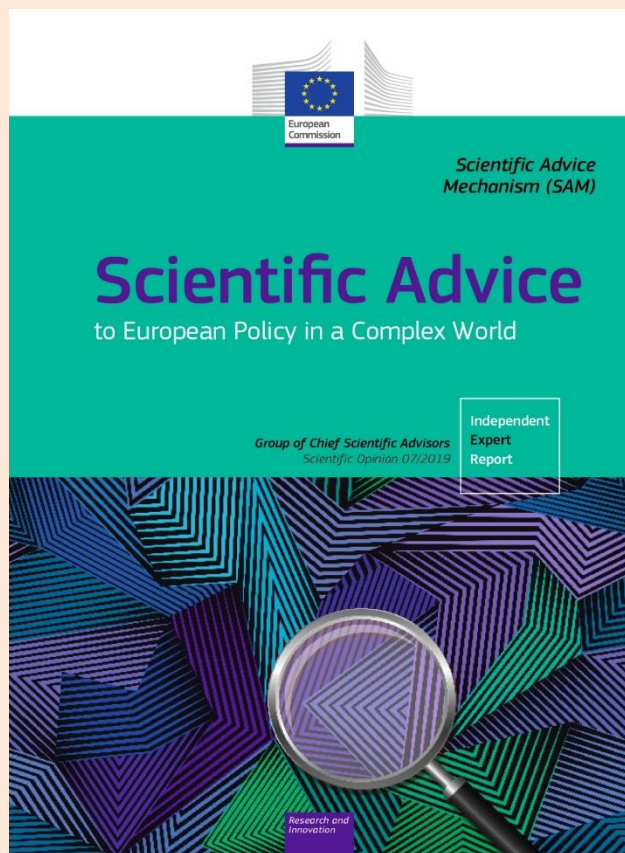
## Ref. Ares(2016)2574583 - 02/06/2016

### Scientific Advice Mechanism High Level Group

#### Explanatory note on scientific advice for the regulatory assessment of glyphosate in plant protection products

Research and Innovation

# Recent scientific opinions





# Mandate: scoping question

***Which adaptation measures could strengthen the resilience of the health sector in Europe in view of climate change?***

*The Opinion will give special regard to vulnerable groups, regions and the urban environment, considering specifically impacts from vector-borne infectious diseases and heat and heat waves.*



# Steps towards the Scientific Opinion

- Scoping Paper, meeting with responsible policy Directorates-General
- EASAC report "The imperative of climate action to protect human health in Europe"
- SAM literature review "Adaptation to climate-change related health effects in Europe"
- Expert elicitation (two workshops, sounding board)
- Stakeholder meeting



# Recommendation 1: Integrate human health into all climate change adaptation policies

*The integration of health aspects in all policies should take place across all sectors and governance levels affected by the climate change adaptation strategies and plans.*

*The EC should offer strategic direction and coordination for that integration across all governance levels (European, national, regional and local) taking into account international goals,*

*Moreover, we recommend strong support for policy learning across all policy sectors and governance levels, evidence-based assessment of adaptation actions, and closing evidence gaps.*





## **How to do it? Recommended policy actions:**

- Promote synergies across all policy areas relevant to health, and increase the effort in integrating climate adaptation and health considerations into policies and standards, notably in:
  - land use (e.g. the role of health in urban, spatial and coastal planning)
  - building design, and infrastructures (e.g. for energy), such as supporting the incorporation of health-related climate-neutral, climate adaptation measures in building and infrastructure standards and codes
  - disaster management, water and food supply, including provision of safe water and healthy food
- Seek and prioritise synergies with climate mitigation actions and disaster risk reduction.



- Use the entire mix of policy interventions available at the EU level in order to intensify adaptation efforts in general, and particularly integration of health into climate adaptation. For instance:
  - embed health-related requirements into the guidance for national adaptation strategies and plans
  - targeted funding of adaptation projects, and projects supported by e.g. European structural and investment funds; e.g. city-level risk assessment of urban heat islands, and ways to reduce them through planning measures, or local planning and risk assessment to identify areas with greater mosquito breeding potential
- Support evidence-based assessment of planned, ongoing and completed climate adaptation actions.



## **Recommendation 2: Support the resilience of the health sector**

*The EU should use its complementary role in health policy to support the capacity and preparedness of the health sector in the EU to deal with climate change impacts, as part of broader disaster and emergency risk strategies, including surveillance, monitoring and assessment.*



## **How to do it? Strengthen the health sector itself:**

- Support the education and training of personnel in the health and social care sector (for instance with regard to relevant risks and emergencies);
- Organise availability of critical components such as stocks of equipment, medicines, vaccines and testing capacity within Europe and support member states and other entities in acting towards such a goal in order to mitigate any health-care crises;
- Support improving basic infrastructure, and amend policies for building and design to include infrastructure adjustment, in relation to heat waves and other risks to health. Infrastructure adjustments should be undertaken whilst considering energy costs and alternative cooling/heating solutions.



- Support health services by improved infrastructures at EU level:
  - Considering the creation of a disaster risk and climate change and health knowledge centre or coordinating mechanism;
  - Extending capabilities of the EU to deal with cross-border threats, based on formal competence, in relation to for example infectious diseases, and ways for the EU to address international dimensions of health risks;
  - Further developing the European climate adaptation platform (ClimateADAPT, Copernicus services, C3S);
  - Supporting surveillance, monitoring and assessment, as well as early warning systems for climate-sensitive processes and diseases. This includes the integration of environmental and health (epidemiology) datasets, as well as interactions between environmental and health agencies.



## **Recommendation 3: Design policies to support the most vulnerable social groups and geographical areas**

*Particular focus should be placed on reinforcing adaptation actions in geographical areas that are particularly vulnerable to health-relevant hazards resulting from climate change, such as heat waves, vector-borne infectious diseases, floods and droughts.*

*Socially just adaptation measures should aim to cater for the social groups that are the most vulnerable to climate-related health impacts.*



## How to do it?

- Seek synergies with health-related preventive adaptation policies, e.g., in building and infrastructure design; e.g. design of elderly care homes (preventive measures), dedicated measures for the elderly in heat-health plans and in preparedness for disease outbreaks;
- Support an understanding of multiple vulnerabilities and how this may impact groups (such as for instance chronic disease amongst elderly); promote the integration of socio-economic data sets and monitor and assess policy implementation, with attention to vulnerable groups and areas;
- Support local policies and initiatives for policy transfer and scaling-up potential, e.g. existing urban initiatives to identify socially just adaptation actions.



**Thanks!**