Cluster Joint Policy Brief 1

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The six Horizon Europe projects, **BlueAdapt, CATALYSE, CLIMOS, HIGH Horizons, IDAlert, and TRIGGER,** form the climate change and health cluster

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Approved by:	All six project coordinators

Nature:

R	X	DEM	-	DEC	-	DMP	-	OTHER	-

R: Report | DEM: Demonstrator, pilot, prototype, plan designs | DEC: Websites, patents filing, press & media actions, videos, etc. | DMP: Data management plan | OTHER: Software, technical diagram, algorithms, models, etc.

Short Description (3-5 lines)

This policy brief summarises the negative impacts that climate change can have on different aspects of health and society and provides a call to action for legislators and policymakers in addressing social, economic, and environmental factors affected by climate change by enacting stronger regulations to mitigate and/or prevent these climate-related impacts. This deliverable also includes the protocol in which the Climate-Health Cluster designed and formulated the ideas and content for creating the policy brief, as well as detailed summaries of each project that provided input in this creative process (provided as Annex).

Note: This version of the policy brief is still under consultation both internally and externally. This version will be amended by incorporating all comments we receive and finalized before public dissemination.

Keywords:	Policy brief, health impacts, climate risk, Climate-Health Cluster, European legislators, policymakers

Dissemination level		
PU	Public	X
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Based on the 6 projects' Grant Agreement, this Cluster Joint Policy Brief 1 corresponds to the deliverable numbers listed below.

Project name	Deliverable number
BlueAdapt	D9.17
CATALYSE	D6.9
CLIMOS	D6.12
HIGH Horizons	D6.12
IDAlert	D1.10
TRIGGER	D9.21

How to quote this document

Climate-Health Cluster (2024), Cluster Joint Policy Brief 1 (Climate-Health Cluster)

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List of Acronyms and Abbreviations

Abbreviation	Description
AMR	Antimicrobial resistance
BlueAdapt	Reducing Climate Based Health Risks in Blue Environments: Adapting to the climate change impacts on coastal pathogens
CATALYSE	Climate Action To Advance HeaLthY Societies in Europe
CLIMOS	Climate Monitoring and Decision Support Framework for Sand Fly-borne Diseases Detection and Mitigation
ECDC	European Center for Disease Prevention and Control
EEA	European Environment Agency
EEAC Network	European Environment and Sustainable Development Advisory Councils Network
EFSA	European Food Safety Authority
EPRS	European Parliamentary Research Service
EU	European Union
EUCRA	European Climate Risk Assessment
GrOW	Growth and Economic Opportunities for Women
HIGH Horizons	HIGH (Heat Indicators for Global Health) Horizons
HIAs	Health Impact Assessments
IDAlert	Infectious disease decision-support tools and alert systems
IDRC	International Development Research Centre
LCDE	Lancet Countdown on health and climate change in Europe
MEP	Member of European Parliament
SFBDs	Sand fly-borne diseases
S4P	Science for Policy
TRIGGER	SoluTions foR mItiGatinG climate-induced hEalth thReats
WHO	World Health Organisation
WNV	West Nile virus

Executive summary

This document provides the first cluster policy brief created by the Climate-Health Cluster. The initial protocol behind the design of this policy brief is included, giving an insight into the creative process and interaction between the six cluster projects in deciding the scope and content of the brief to be highlighted and disseminated to European legislators and policymakers. Also included are the detailed project summaries provided by each of the projects that enabled the identification of key concepts and overlapping objectives between the projects in deciding what content to focus on for dissemination.

The policy brief summarises major health-related impacts from climate change, provides a call to action for legislators and policymakers in enacting stronger regulations to combat climate change, illustrates the role of the Climate-Health Cluster in translating scientific research into policy outcomes, and provides recommendations to European legislators and policymakers regarding climate and health actions, with a particular focus on understudied social factors and stronger protection for vulnerable populations.

1 Cluster Policy Brief Protocol

1.1 Background

Within the European Climate-Health Cluster, Working Group 1 (WG1) Science Translation to Policy, oversees implementing the joint Science for Policy (S4P) strategy. Plans to produce policy briefs are included in the six projects, and identified as a relevant outcome of the Climate-Health Cluster (1). It was agreed that the Cluster will deliver three joint policy briefs. These briefs aim to feed into the decision-making process and outcomes at the European Union (EU) level and (inter)national levels with evidence-based knowledge and inputs. The messages and key actions covered will be defined based on the Cluster's policy and scientific strategies.

Though most individual projects plan to produce their policy briefs during the last stage of their respective project, when the final research results are available, WG1 members have agreed that the first cluster policy brief will aim at communicating the scope and potential contributions of the 6 individual projects to provide a better understanding of the underlying health, social and economic impacts of climate change to relevant audiences. Since the cluster projects have not yet produced new results with policy implications, it was agreed that the 2024 report of the Lancet Countdown on health and climate change in Europe (LCDE) could be used as a building block to show how much policy relevant information on the climate change-health nexus is already available. Regarding the link to the LCDE, it has also been agreed that its role in the policy brief will be instrumental and that the content and focus of the policy brief will be on the cluster and its projects.

1.2 What objectives do we want to achieve?

All cluster projects agreed on what objectives to achieve with this cluster policy brief, including:

- To disseminate the existence of the cluster, its projects and potential contributions to improve policies for climate and health.
- To develop a shared experience in developing policy briefs as a cluster. Many cluster partners have institutional experience in developing policy briefs and building on their experiences will strengthen the cluster policy briefs.
- To contribute to a dialogue between the different projects regarding their specific approaches to policy issues and the interaction with policy making audiences. The latter is an important issue for the cluster to generate synergies and added value (see Annex 1)
- To implement the work plan of the cluster's Science for Policy (S4P) strategy (1).

1.3 Targeted audience, overarching message and content

Our policy brief was created with a clear understanding of our identified target audience. It was agreed that by including a more specific aim, such as increasing awareness of the EU parliamentarians on the importance of the climate-health nexus, the cluster's overarching message and content would be consistent with this aim.

The European Union is at the forefront of policy efforts in the fight against climate change. However, despite its political will, the commitments of many European countries are still far behind from what is needed. Therefore, considering that the Climate-Health Cluster is a European research collaboration, our policy brief is an excellent opportunity to highlight the importance of the climate-health nexus and to push for more robust and ambitious climate change policies by both the EU and its member states and beyond. In this regard it could be attractive to address the EU institutions as a targeted audience. One of the LCDE indicators shows that the health and climate change nexus is rarely addressed in the sessions of the European Parliament. This indicator tracks political engagement with health and climate change in the EU

by assessing the number of times climate change and health related terms were mentioned in European Parliament legislators' speeches between 2014 and 2021 (2). In 2021, the data set included a total of 413 debates containing 253,839 individual speeches, which contained 618 references to climate change, while only 31 of these references made an explicit reference to the health-climate change nexus. The indicator varies from 5 references in 2014 to 34 in 2016. We speculate that explicit reference to the health-climate change nexus or specific actions to address adverse effects of climate change on health of EU citizens happens rarely in many national parliaments in European countries as well.

Regarding the overarching message, our policy brief needed to integrate the overall aims of the different cluster projects and to convey a strong policy-oriented recommendation. In its 2023 report, the LCDE adopted the slogan: "unprecedented warming needs unprecedented responses", which has been used as common thread.

Regarding the content and structure of the policy brief, each project identified its own messages and content that it wants to include in the brief. Since the LCDE was adopted as a building block of the brief, individual projects were able to identify if any of the LCDE indicators are particularly relevant for their specific aims. Subsequently, we developed a narrative that gives coherence and integrates the contributions of each project.

An important issue raised during the development of the policy brief is when to contact policy-oriented stakeholders as well as who to contact. Since each project has its own list of stakeholders (some of which are shared by several projects), as well as a common stakeholder list (living document), we needed to decide which stakeholders we wanted to contact during the development of the policy brief. It was important to consult policymakers early in the process. Examples of stakeholders that were contacted are: The EU Observatory on Health and Climate Change, the European Environment and Sustainable Development Advisory Councils Network (EEAC Network), European Parliamentary Research Service (EPRS)). In addition, each project contacted some of their own stakeholders if they were determined to be useful.

1.4 Methodology

Though there is little scientific evidence on methods to develop effective policy briefs (3,4) some institutions have developed their own recommendations. For example, Toronto University has produced a toolkit for developing effective policy briefs (5). Many universities and research institutes produce policy briefs that are grounded in their research and inform societal policy debates and discussions. The Lancet Countdown has used policy briefs as a communication tool, including one on Europe (2). Growth and Economic Opportunities for Women (GrOW) Research policy briefs are also regularly published as companion pieces to existing working papers, by a consortium including among others the International Development Research Centre (IDRC) and McGill University (7).

The methodology followed in the present Cluster policy brief follow similar protocols developed by the IDRC (8), in which vital elements of an influential policy brief are: purpose, audience, content and structure. Other important components of a successful policy brief, such as using the correct communication language and strategy, are also incorporated into this policy brief.

1.5 Work plan

WG1 agreed to establish a writing team (see composition below) which shared and reported its progress to the other members of the WG1. The work of the writing team was as open and inclusive as possible and included close communication with the Cluster project coordinators and members from WG3 on Dissemination and Communication.

The writing team compiled summaries from each Project to explore overlap and synergies within the Climate-Health Cluster. They started with the S4P summaries from the Science for Policy strategy (September 2023, see annex 3), and they elaborated the summaries by using a common template (see annex 1 of this report). The writing committee worked with WG1 and WG3 to identify which specific resources (e.g. templates, graphic design, dissemination) were needed and how to make them available.

Regarding the timeline of submission, it is anticipated that the policy brief will be available at the end of April 2024 and will be publicly disseminated during the following months. An important consideration that we are keeping in mind is the timing of dissemination of the policy brief to our primary stakeholders, the EU Members of Parliament (MEPs), since there will be European Parliament elections in June 2024. Targeting the current MEPs could provide an opportunity to highlight the importance of the climate-health nexus during the electoral debates, while targeting the newly elected MEPs after the elections could help to facilitate a longer lasting impact.

1.6 Writing team

- BlueAdapt: Alba Godfrey
- CATALYSE: Josep M Antó
- CLIMOS: Maria Maia
- HIGH Horizons: Debra Jackson
- IDAlert: Shouro Dasgupta
- TRIGGER: Ben De Groeve & Claudia de Luca

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2 Cluster Policy Brief

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The importance of protecting **human health** in the EU climate policies

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Summary

As anthropogenic climate change continues to escalate, its detrimental effects on human health are becoming pronounced, demanding urgent transformative actions from European policymakers. This policy brief underscores the importance of protecting human health in the EU climate change policies. As the European Climate-Health Cluster, comprising six pioneering research projects, we call for increased engagement of legislators and policymakers to co-create evidence-based policies that e¬ffectively safeguard public health in the face of climate challenges.

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What's at stake?

Human health is increasingly impacted by anthropogenic climate change. Globally, 2023 was the warmest year on record, with average global temperatures exceeding pre-industrial levels by 1.5°C between February 2023 and January 2024.

As the 2024 European Climate Risk Assessment (1) shows, Europe is the fastest-warming continent in the world and increasingly prone to a range of climate-related hazards. Extreme heat in marine and terrestrial systems is becoming more frequent and shifting precipitation patterns, including more severe rainstorms, are evident. In recent years, catastrophic floods, severe droughts and wildfires have occurred across various regions, in Europe. Climate change is a risk to human health and a multiplier that can exacerbate existing risks and crises, putting pressure on our food, water, energy, transportation and health systems. Cascading climate hazards pose systemic society-wide challenges, significantly threatening human health across Europe.

According to the 2024 report of Lancet Countdown on Health and Climate Change in Europe (2), heat-related deaths have increased across most of Europe, with an average increase of 17.2 deaths per 100,000 inhabitants between 2003-2012 and 2013-2022 (Figure 1). Risky hours for physical activity due to heat stress have been spreading beyond the hottest parts of the day over the period 1990-2022, which may result in people reducing their overall physical activity and thereby increasing their risk of non-communicable diseases. Heat exposure can further undermine people's health by impacting the social and economic determinants of health such as

labour supply. Moreover, in Europe, climate change has resulted in almost 12 million people experiencing moderate or severe food insecurity in 2021.

Impacts are also unequally distributed across Europe. Southern Europe tends to be more affected by heat-related illnesses, wildfires, food insecurity, drought and leishmaniasis, whereas northern Europe is equally or more impacted by Vibrio and ticks. Within countries, ethnic minoritised and Indigenous people, low-income communities, migrants and displaced people, sexual and gender minoritised, and women going through pregnancy and childbirth, tend to be more severely affected by climate-related health impacts.

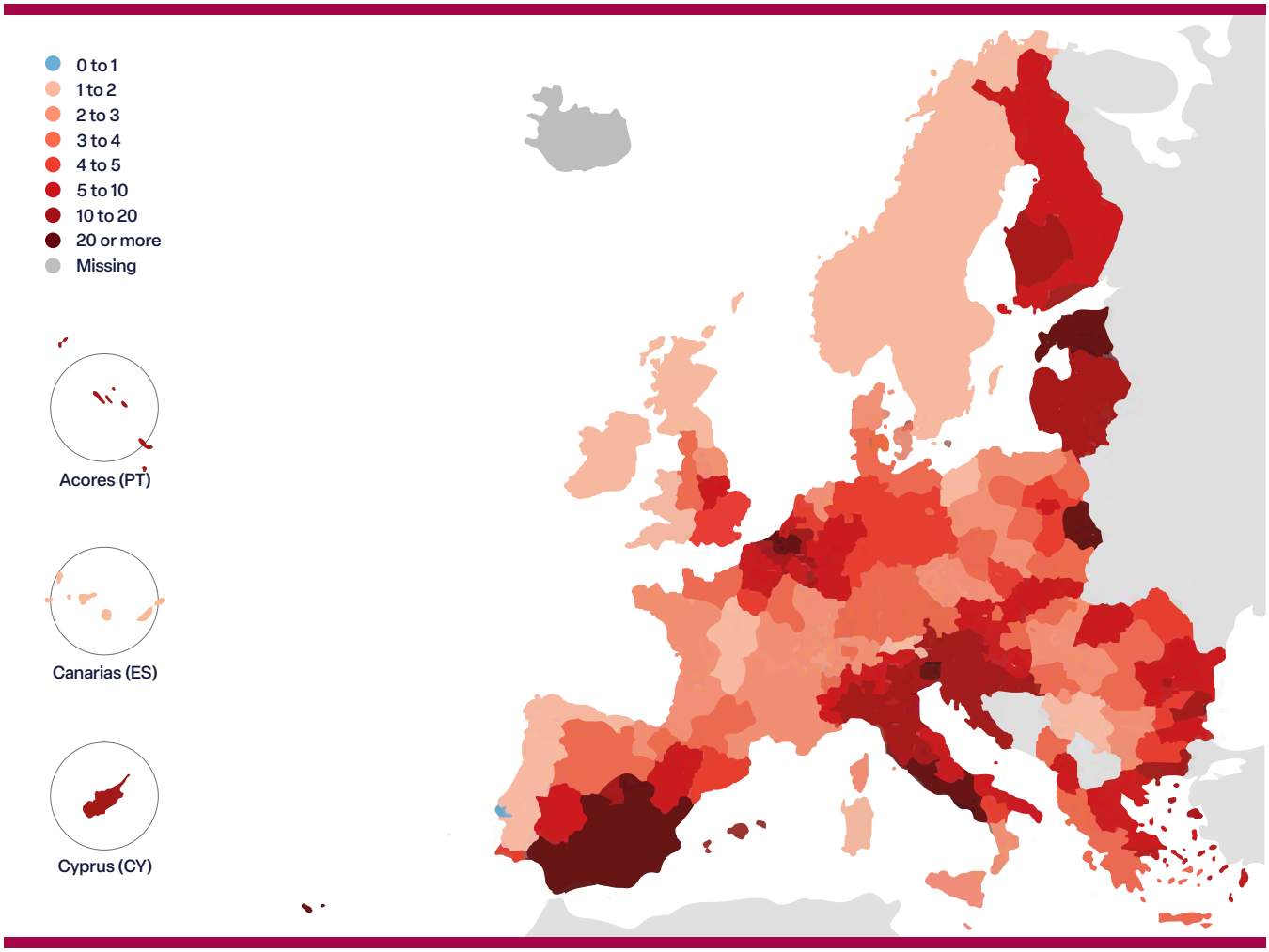

Figure 1 shows how much extreme heat-related mortality episodes due to anthropogenic warming have increased in 2003-2022 compared to the pre-industrial climate (increase range from no increase in blue to more than twenty-fold increase in dark red). (Source: Reference 2. 2024 report of Lancet Countdown on Health and Climate Change)

The disruptive impact of climate change, causing milder winters and warmer temperatures, enables the geographic expansion range of vector-borne diseases. Climate suitability for various climate-sensitive pathogens and disease vectors has increased in Europe (e.g., Vibrio, West Nile virus [WNV], dengue, chikungunya, Zika, malaria, leishmaniasis, and ticks).

Impacts are also unequally distributed across Europe. Southern Europe tends to be more affected by heat-related illnesses, wildfires, food insecurity, drought and leishmaniasis, whereas northern Europe is equally or more impacted by Vibrio and ticks. Within countries, ethnic minorities and indigenous people, low-income communities, migrants and displaced people, gender and sexual minorities, women going through pregnancy and childbirth, and the elderly tend to be more severely affected by climate-related health impacts. These differential impacts represent an equity deficit.

The role of legislators and policymakers to support climate change policies to protect human health

In recent years Europe has made progress to protect human health and well-being against the detrimental e¬ffects of climate change. Advances in the European Union (EU) and in di-fferent countries in the European region include, among others, the European Climate Law, the EU Adaptation Strategy, multilateral declarations such as the Budapest Declaration adopted by the WHO Europe, WHO Global

Resolution on Climate Change in 2024 and reviews of the standards that regulate air quality. EU policies directly related to climate change cover a large variety of climate hazards, and national climate risk assessments are increasingly used to inform adaptation policies. **However, current levels of action are insufficient both with respect to transitioning to net-zero energy systems** as well in view of implementing adaptation measures. According to a recent EEA report, Europe has failed to meet the 2020 Green House Gas (GHG) reductions targets (3). The latter requires the pace of

annual absolute GHG emission reductions be more than doubled compared with the annual progress seen since 2005.

Legislators and policymakers in Europe have an opportunity to be at the forefront of efforts to protect human health from climate change as well as to maximise the potentially huge health co-benefits of mitigation strategies, mainly due to improvements in air quality, nutrition and physical activity. Political awareness of the health impacts of climate change remains low. The Lancet Countdown in Europe initiative tracks political engagement with health and climate change at the EU-27 level. Its latest report assessed references including both climate and health related terms in 264,122 speeches made by legislators in the European Parliament in 2022. In total, there were only 10 references to the intersection of health and climate change, most of them coming from German legislators, followed by Spanish, French and Swedish legislators. Of the speeches referencing the climate-health intersection, only two included terminology related to equity.

Likewise, a recent analysis of climate-related EU and international policies conducted by TRIGGER, a Horizon Europe project, has revealed critical gaps in addressing certain climate hazards and cascading hazards (4). Additionally, social and mental health impacts of climate change remain largely overlooked in most climate policies, and there is limited coverage of certain physical health impacts (e.g., allergies and respiratory, cardiovascular, neurological and skin diseases). Furthermore, there is little attention in climate policies to the impacts on vulnerable groups.

The European climate-health cluster: science translation for policy & practice

The Climate-Health Cluster, established in October 2022, brings together six European research and innovation projects funded by the EU's Horizon Europe Research and Innovation Initiative. As a Cluster, we aim to raise awareness about the health impacts of climate change both within Europe and globally, and the potentially huge health co-benefits from mitigation and adaptation strategies. We collaborate closely with policymakers to translate solid scientific evidence into effective and timely climate-health policies by providing cutting-edge scientific evidence, pioneering tools, co-created services, policy briefs, and recommendations. With this we strive to maximise the societal and policy impact of our EU-funded research linked to climate, health and policy.

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The six projects address different aspects of the nexus between climate change and human health:

BlueAdapt (https://blueadapt.eu) focuses on how coastal pathogens are affected by climate change and environmental pollution and the associated risks to human health.

CATALYSE (https://catalysehorizon.eu/) develops national and sub-national-level climate-health indicators for EU-27 and neighbouring countries relevant to EU, national, and regional policies.

CLIMOS (https://climos-project.eu/) generates science-based predictions, actions and policy-relevant recommendations to mitigate climate change-induced emergence and spread of sand fly-borne diseases

HIGH HORIZONS (https://www.high-horizons.eu/) looks to how heat exposure impacts pregnant women, infants, children and health workers and how these impacts could be prevented through mitigation and adaptation.

IDAlert (https://idalertproject.eu/) focuses on climate-sensitive zoonotic diseases to ensure that key stakeholders have easy access to relevant data and tools, that enable to develop monitoring strategies and improve design of policies and interventions.

TRIGGER (https://project-trigger.eu/) aims to produce trans-disciplinary knowledge and communication material about direct and indirect health effects of climate change and related policies in order to advance society uptake at a policy and personal level.

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Our call to European Union policymakers and legislators

Lawmakers and policymakers have an enormous responsibility to safeguard human health from the adverse impacts of climate change. Society is at a crossroads that requires the urgent formulation and implementation of transformative policies.

The European Climate-Health Cluster is committed to generating the knowledge and tools necessary to integrate human health in climate policies and programmes and raise awareness of the climate change and health nexus. **We recommend to:**

- ***Incorporate* the safeguarding of human health, including both physical and mental health and social wellbeing, into all pertinent climate policies**. Special attention is required for the most vulnerable demographics: low-income communities, women, elderly, ethnic minorities, migrants and displaced people and women going through pregnancy and childbirth, tend to be more severely affected by climate-related health impacts.

- ***Address* the equity gap to reduce social disparities in health outcomes and adopt a systemic and multisectoral approach.** Health Impact Assessments anticipate the health consequences of policies for vulnerable people and ensure equitable policymaking across sectors. Policies should consider not only individual hazards but also their interactions and cascading climate risks.

- ***Urgently* strengthen mitigation strategies to prevent catastrophic climate change.** The current health impacts of climate change are already exceeding adaptive capacity in the EU. Placing health at the centre of mitigation actions has the potential to avert millions of premature deaths by improving air quality, promoting better nutrition, encouraging physical activity, and reducing the incidence of vector-borne diseases.

- ***Put* health adaptation at the centre of climate change policies in tandem with the severity of existing impacts.** This entails implementing and leveraging tools such as early warning systems to disseminate real-time updates to local populations, facilitating proactive adaptation to prevailing risks. Strengthening and harmonising disease surveillance systems for climate-sensitive conditions, including heat health action plans, across Europe, is imperative.

- ***Transform* healthcare systems to substantially reduce their environmental footprint and enhance their preparedness,** response and resilience capacities for addressing climate-related risks and emergencies.

- ***Foster* collaboration among scientists, policymakers, legislators, and all stakeholders** to exchange knowledge and information regarding health risks, fostering greater comprehension and empowering individuals and communities to make informed decisions to safeguard their health and well-being.

- ***Increase*** **support for research on the nexus between climate change and human health and the health dividends of both mitigation and adaptation efforts.**

In the coming years, the **European Climate-Health Cluster** and its projects will develop novel evidence-based tools and policy recommendations to support policymakers in making informed decisions for improving human health and the health of the planet. Stay updated and connected by visiting our cluster website for the latest developments, resources, and insights. We welcome opportunities for further discussions or collaborations. Let's work together towards a healthier future for both our people and the planet.

Acknowledgments:

The Policy Brief is an output of the collaborative co-creative work of the Cluster's Working Group 1 (Science Translation to Policy) with cooperation from invited members including consultation with external and internal stakeholders.

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The projects that form the European Climate and Health Cluster have received funding from the European Union's Horizon Europe research and innovation programme, under grant agreement No. 101057764 (BlueAdapt), No. 101057131 (CATALYSE), No. 101057690 (CLIMOS), No. 101057843 (HIGH Horizons), No. 101057554 (IDAlert), and No. 101057739 (TRIGGER). BlueAdapt also receives funding from UKRI grants Nos. 10052955 and 10049774, CLIMOS from UKRI grants Nos. 10038150 and 10039289, and HIGH Horizons from UKRI grant No. 10038478.

Blue Adapt CATALYSE CLIMOS HIGH HORIZONS IDAlert trigger

3 Annex 1: Policy relevant project summaries

3.1 Purpose

During the planning phase of the policy brief, it was agreed to prepare a summary of each project that would serve to identify what the contents of the policy brief could be. It was also agreed that these summaries would be included as an appendix.

3.2 Summaries

3.2.1 BlueAdapt

BlueAdapt is responding to the climate-based health risks of pathogens in coastal waters. It explores how climate change and environmental pollution affect the spread, abundance and virulence of bacteria and viruses and the associated risks to human health.

Aim:

BlueAdapt aims to further the scientific basis and provide decision support for safeguarding human health in view of increased coastal pathogen risks. It aims to improve the understanding of how climate change in interaction with other stressors such as antimicrobial resistance affects coastal pathogens. The project tries to explore effective ways for European, national, regional and local governments and authorities to adapt through policy and innovation.

Background:

Europe has more than 20,000 bathing water sites, and more than 50% of Europe's population live within 50 km of the sea or 2.5 km of fresh water. With rising temperatures, more people are likely to spend time in these aquatic environments. However, rising temperatures and environmental pollution are enabling specific water-related pathogens to multiply and/or persist for longer in the water cycle, and evidence shows that sea bathers are at greater risk from infection and antimicrobial resistant bacteria. There is also an increased risk of seafood contamination. More research is needed to understand the effects of climate change on waterborne pathogens, in order to protect human health.

Knowledge gaps we are filling:

- How does climate change in interaction with other stressors affect human health risks associated to coastal pathogens?
- Where and why are people at risk?
- How can an extended OneHealth perspective identify links between human, animal and ecosystem health and provide a more integrated understanding?
- What are the most effective ways to adapt?

What are we providing to policymakers:

- New evidence and understanding:
    - Explaining how pathogens are affected by climate change
    - Uncovering how and where people are at risk from coastal pathogens
    - Quantifying the impacts on human health
    - Carrying out cost-benefit analysis of potential interventions (such as early warning systems)
    - In-depth analysis of case studies in six countries (NL, IT, PL, ES, IE, UK – England & Wales)
- New tools to help manage and adapt to risks include:
    - Extended One Health framework
    - Pathogen transport and survival simulations in coastal zones
    - Prediction and early warning system: improvement of alert systems in bathing waters

- Policy briefs and recommendations to help integrate BlueAdapt findings into policy mechanisms at the local, national and EU level

What are we asking of policymakers:

Policymakers have a duty to better protect human health and reduce risks to health from contaminated waters, for instance by:

- Sharing information about health risks in a way that increases understanding and enables everyone to make informed choices to protect their health and wellbeing
- Setting up/utilising tools such as early warning systems to provide real-time updates to local populations in a way that allows everyone to adapt to current risks
- Putting in place strategies to mitigate/adapt to climate change and environmental pollution related to coastal waters (including on AMR)

One critical element at the heart of BlueAdapt policy recommendations is the need for a systemic approach, and for policymakers to work together across sectors (environment, health, education, etc.), as well as for policymakers to collaborate with industry, civil society and local populations, to build a holistic response to this systemic issue.

Policy engagement:

BlueAdapt will engage with policymakers throughout the course of the project through workshops at the local, national and EU level. We will seek input to co-create policy messaging and recommendations, as well as insights into the BlueAdapt tools, to ensure that they are fit-for-purpose.

3.2.2 CATALYSE

Despite clear signs that the impacts of climate change are escalating, the global response has been inadequate. Traditional scientific efforts have fallen short of providing knowledge and tools that have been broadly applied in decision-making, and innovative approaches to knowledge translation are needed.

Aim:

To CATALYSE climate action in Europe to protect public health, our overarching goal is to provide new knowledge, data, and tools on: i) the relationships between changes in environmental hazards caused by climate change, ecosystems, and human health; ii) the health co-benefits of climate action; iii) the role of health evidence in decision making; and iv) the societal implications of climate change for health systems.

Background:

The Paris Agreement presents a remarkable opportunity to respond to climate change. However, without accelerated action from all countries and sectors, large COVID-19 recovery needs and an increasingly unstable political landscape that prioritises short-term interests threaten to undermine progress. Europe, through the Green Deal and the Next Generation EU post-COVID recovery plan, is leading the way to build back better and reach Paris Agreement goals. Solidifying the links between climate change and health is essential to building support among the public and policymakers.

Knowledge gaps we are filling:

- CATALYSE will provide knowledge for climate change policies in the following areas:
- Indicators to monitoring mechanism of health-relevant climate policies and actions
- Health co-benefits of mitigation policies
- Innovative surveillance tools, early warning systems (EWS) and predictive models
- Adaptation and mitigation in health systems

What are we providing to policymakers:

CATALYSE will provide scientific evidence and uptake of research results into relevant policies at EU, national and regional level:

- CATALYSE will provide knowledge for climate change policies in the following areas:
- National and sub-national-level indicators for EU-27 and neighbouring countries relevant to EU, national, and regional policies.
- Solid scientific evidence related to relevant EU policies and overarching policy frameworks such as the Green Deal and the 8th Environment Action Programme.
- Validated tools in partnership with health authorities and public agencies to promote real-world.
- Uptake of research results in public health practice and local and regional plans.
- Inform strategies to promote uptake of evidence in specific policy processes across Europe.
    - Solid scientific basis for national and regional health system planning through frameworks, guidelines, and evidence related to adaptation and mitigation in health systems (WP5).

CATALYSE also includes a policy translation dedicated program aim at filling the knowledge needs of policy making which includes:

- In depth analyses of existing policies related to climate change and health in three European countries: 1) the commitment by the UK's National Health Service to become carbon net zero, 2) Poland's pledge to phase out coal; and 3) Portugal's community-based adaptation strategy for wildfires.
- Examining how communicating and framing evidence on the health impacts of climate change induced environmental hazards affects engagement, behavioural change, and support for climate policies across different types of actors in five European countries (Bulgaria, Germany, Greece, Spain, UK).
- Developing a multi-functional digital platform containing data and tools to inform, empower, and support advocacy and decision making.

What are we asking of policymakers:

- To engage with CATALYSE on a dynamic dialog during the development of the project.
- To increase awareness of the importance and characteristics on the health impacts of climate change.
- To use evidence on health impacts of climate change in policy making.

Policy engagement:

CATALYSE will promote stakeholder engagement through the CATALYSE User-Stakeholder Group (USG). Stakeholder engagement is a key pillar of project Dissemination and Exploitation plans. Through the USG, targeted users of CATALYSE research outputs are involved in the project from its inception and its role in the consortium allows CATALYSE researchers to interact with users of project results throughout the project.

The primary role of the USG is to advise and provide feedback to WPs in a two-way exchange; act as champions of the project, support the diffusion of project results; and help align project activities with relevant initiatives external to the project.
The overarching concept of CATALYSE is that in order to respond to the urgent need for action, evidence and tools related to climate change and health must encompass the entire knowledge cycle.

Highlights:

CATALYSE will develop this overarching concept through the following pillars:

- Indicators related to climate and health have high scientific and policy relevance.

- Assessment of known and unknown health co-benefits of mitigation and their social and economic benefits.
- Use of innovative surveillance and forecasting tools to improve the implementation and effectiveness of adaptation and mitigation strategies.
- Provide scientific evidence on health impacts of climate change to increase engagement of individuals and institutions.
- Improve the preparedness of health systems in Europe for preventing and adapting to climate change impacts.

3.2.3 CLIMOS

CLIMOS, Climate Monitoring and Decision Support Framework for Sand Fly-borne Diseases Detection and Mitigation with COst-benefit and Climate-policy MeasureS, aims to assist mitigation of climate – and climate change-induced emergence, transmission and spread of vector-borne and zoonotic pathogens based on Eco-health and One Health approaches. This will be achieved by quantifying climate and environmental-related drivers of sand fly vector populations and the sand fly-borne diseases (SFBDs) across Europe.

Aim:

The main objective of this project is to support the establishment of an Early Warning System (EWS) for all endemic sand fly vectors and the main pathogens (*Leishmania* parasites and Phleboviruses) and sand fly triggered health infections and potential diseases. The approach will be prospective, i.e., generate predictions to assist policy recommendations, provide interactive maps for risk management and carry out adaptation cost and benefit assessments.

Background:

Phlebotomine sand flies are worldwide vectors of an intracellular protozoan group *Leishmania*, bacterial and viral pathogens including the Phleboviruses.

There are several different clinical forms of human leishmaniasis: cutaneous leishmaniasis, which causes skin sores, and visceral leishmaniasis, which affects several internal organs (usually spleen, liver, and bone marrow), and is fatal if untreated in >95% of cases.

The Phleboviruses comprise more than 50% of sand fly-vectored viruses known to date. In Europe, the pathogenic Phleboviruses such as Sandfly Fever Sicilian virus, and Toscana virus that can lead to febrile illnesses and meningitis / encephalitis respectively circulate in the countries bordering the Mediterranean. In Europe, the 25 known vector species were largely confined to the Mediterranean countries, however northern shifts in their geographical range have been recently documented.

The disruptive impact of climate change causing milder winters and warmer temperatures, increases sand fly rates of survival, extends their geographical reach into new and unexpected regions, and may prompt earlier and intensified sand fly activity.

The lack of awareness, particularly in the areas where transmission is a new occurrence, increases the risk of failing to recognize these infections. For example, if your dog exhibits skin lesions, hair loss, or unexplained weight loss, do not hesitate to consult with a veterinarian promptly for a thorough evaluation. For humans, correct diagnosis may be a bit trickier, as Leishmaniasis and Phleboviruses symptoms can often mimic those of other infections including skin conditions and common flu-like symptoms.

The pressing issue of sand fly-borne diseases, exacerbated by climate change, environmental shifts, and globalization, has been a driving force behind research interests, identifying the likelihood of these diseases spreading to new geographical areas and becoming more prevalent in endemic regions.

Knowledge gaps we are filling:

- How does climate change in interaction with other stressors affect human and animal health risks associated with sand fly-triggered health infections and diseases?
- Where and why are people at risk?
- How can an extended OneHealth perspective identify links between human, animal and ecosystem health and provide a more integrated understanding?
- What are the most effective ways to adapt to such challenges?
- What training materials and guidelines are needed both on how to use EWS and how climate change impacts on health?

What are we providing to policymakers:

- New evidence and understanding:
    - Better understanding of how sand flies are affected by climate change.
    - Uncovering how and where people and animals are at risk from sand fly exposure
    - Quantifying the impacts on human and animal health
    - Support Global and EU climate policies, the EU Observatory for Climate and Health, and the Green Deal activities with up-to-date datasets and scientific evidence
    - Public authorities and surveillance organisations will have access to a predictive and EWS of climate-change induced events to facilitate improved policy actions aimed to mitigate direct and indirect health impacts
    - Carrying out cost-benefit analysis of climate change mitigation and adaptive actions to support decisions across policy sectors.
    - Provide 4 foresight scenarios, co-developed with different stakeholders, including policymakers.
    - In-depth analysis of case studies in 14 countries (PT, ES, IT, FR, HR, TR, IL, AT, CZ, DE, AL, GR, SL and RS)
- New tools to help manage and adapt to risks include:
    - Extended One Health framework: The CLIMOS project's focus on EWS encompasses human health, animal health, and the environment. This holistic "One Health" approach acknowledges the interconnectedness of these elements and aims to protect not only humans but also animals and ecosystems.
    - EWS for sand fly-triggered health infections and diseases, which would include predictive models, interactive maps for risk management and adaptative cost and benefit assessments. EWS help inform the public and healthcare authorities about potential disease outbreaks and empower them to take preventive measures promptly. They can distribute preventive resources and raise awareness.
    - National health ministries as project partners and direct end users, to help inform adoption of developed tools within the public and veterinary health sectors.
    - Decision-makers can use the data provided by EWS to formulate policies aimed at tackling the evolving challenges posed by climate change and vector-borne diseases.
- Policy briefs and recommendations to help integrate CLIMOS findings into policy mechanisms at the local, national and EU level

What are we asking of policymakers:

The following are preliminary recommendations and will be enhanced through our research results. Policymakers have a duty to better protect human and animal health and reduce risks to health from SFBDs, for instance by:

- Making data on human and animal cases of vector borne diseases, such as Leishmaniasis, available from all EU and non-EU countries. The necessity arises particularly as SFBDs are not notifiable in many EU countries, nor do standard operating procedures exist to monitor vector presence, host or vector infection rates, or for proactive or reactive infection/disease management.
- Providing information about spread and risks associated with sand flies and vector-borne diseases, via EWS, so that the public can take steps to reduce their exposure and vulnerability, leading to fewer adverse health consequences.
- Promote awareness campaigns and public outreach efforts informed by early warnings. This will encourage communities to engage in disease prevention and fosters a sense of shared responsibility and encourages community members to take actions that protect themselves and their neighbours.

Policy engagement:

CLIMOS will engage with policymakers throughout the course of the project. For instance:

- CLIMOS will deploy and validate the project results in 10 (ten) cross-border pilots, involving government, public, and private healthcare authorities from the consortium and beyond.
- To ensure wide policymaking impact, CLIMOS will engage public and veterinary health authorities involved in project realization (including Italian, Israeli and Turkish Health Ministries) in designing public EWS and health policies for SFBDs preparedness and responses that can be undertaken using CLIMOS Climate and Health tools.
- In the development of CLIMOS policy briefs which will be based on robust scientific and social data and monitoring systems. CLIMOS recommendations will contribute to Neglected Tropical Diseases programmes, providing input to the World Health Organisation (WHO), the European Center for Disease Prevention and Control (ECDC), and the European Food Safety Authority (EFSA).
- In the development of CLIMOS foresight scenarios, representatives from policy, WHO, ECDC and others will be invited to take part in the Stakeholder Workshop that will be organized.

Decision-makers can use the data provided by EWS to formulate policies aimed at tackling the evolving challenges posed by climate change and vector-borne diseases.

3.2.4 HIGH Horizons

Aim:

HIGH Horizons hopes to alleviate the impact of heat exposure on pregnant women, newborns, children and health workers through mitigation and adaptation interventions in health facilities, a personalised Early Warning System and policy-oriented work.

Our objectives are to:

1. Identify and select suitable indicators for quantifying and monitoring the global, EU and national-level health impacts of extreme heat among pregnant and postpartum women, newborns and infants in Europe and sub-Saharan Africa.
2. Develop and test an Early Warning System using a smartphone app to provide individualized heat stress warnings, and locally adapted messaging for protecting pregnant and postpartum women, infants and health workers.
3. Identify cost-effective, integrated adaptation-mitigation interventions to alleviate heat impacts on health workers, and to reduce carbon emissions associated with health care.
4. Support global and EU climate policies and activities on the monitoring of direct and indirect impacts of climate change on health, and the strengthening of Early Warning Systems through guidance documents, and risk assessment and cost-benefit analysis tools.

5. Investigate the biological and thermal physiological pathways from heat effects on adverse health outcomes among pregnant women and their infants in the first year of life.

Background:

While it is clear that pregnant and postpartum women, and infants are heavily affected by climate change, these populations have received little attention to date in climate change policies. Health conditions affecting pregnant and postpartum women, foetuses and infants can have lifelong and trans-generational implications, considerably more profound than among other population groups. Understanding and measuring heat impacts in these populations is thus essential for calculating the overall burden of heat-related disease, and for guiding policy choices. A series of systematic reviews by members of the HIGH Horizons team identified in excess of 200 studies demonstrating the harmful direct impacts of heat on maternal and newborn health outcomes, including preterm birth, stillbirth, congenital anomalies, pre-eclampsia, maternal haemorrhage, foetal distress and long-term impacts on children's health. These first years of life are a unique period of vulnerability, – but also a window of opportunity – when the foundations of optimum health, growth, and neurodevelopment across the lifespan are established.

Indirect impacts of extreme heat events on pregnant women and infants are also important to consider, in addition to direct mechanisms. High temperatures promote replication and survival of microbes and shifts in the geographical range of vector species. Consequences include increased incidence of food-, water- and vector-borne infections, of major concern in pregnant women and infants. Gastroenteritis cases increase markedly during heat waves, and results in higher numbers of hospital admissions of infants [8]. Infections of the genital tract, such as group B streptococcus, the leading cause of bacterial pneumoniae, sepsis and meningitis in neonates, are also heat sensitive [6]. Vector-borne infections such as malaria and dengue are especially severe for pregnant women and infants [1]. Also, risks associated with food insecurity particularly as it pertains to malnutrition, growth stunting and neurocognitive development can be impacted by heat and drought. In most settings, pregnancy, breastfeeding and care for infants already constrain a woman's ability to generate income. Extreme heat events can further undermine productivity of women and, by extension, negatively affect their income, savings, purchasing power, and ability to pay for health and childcare.

Heat impacts on workers, including in the health sector are profound. Heat-related reductions in labour capacity result in earning losses equivalent to an estimated 0.17-0.25% of the Gross Domestic Product in Italy and Spain, and as much as 3.9-5.9% decreases in Gross Domestic Product in many LMICs [1]. In many LMICs, poorly built and ventilated health facilities offer little protection against heat exposure and facilities are frequently 4-6°C warmer indoors than outdoors during the summer months [9]. The COVID-19 pandemic provides a stark reminder that protection of the health and wellbeing of health workers has to be placed firmly at the centre of any responses to public health threats. The health sector response to the climate crisis needs to do more to take this fact on board. Concerns around climate change and health facilities extend beyond heat impacts on health workers. In fact, the health sector accounts for around 5% of all global emissions and up to 8% in some settings [10], so represent an opportunity to reduce carbon emissions through combined adaptation and mitigation changes and policies for climate resilient health systems for the benefit of these vulnerable populations.

Knowledge gaps we are filling:

- How does increased heat from climate change in interaction with other stressors affect the health of pregnant women, newborns, children and health workers?
- Where are women, newborns, children and health workers at most risk and how to effectively monitor those risks for policy and planning?
- Can a personalised EWS App for pregnant and postpartum women and health workers assist in increasing awareness and supporting women to take better care of themselves and their babies?

- What are effective actions and messages for pregnant and postpartum women and their children and health workers that help them to manage heat and protect their own health?
- What changes can be made in health facilities to reduce heat exposure to protect the health and well-being of health workers and patients.
- What are cost-effective mitigation interventions to reduce carbon emissions from health facilities?

What are we providing to policymakers:

- New evidence and understanding:
  - Explaining how heat impacts pregnant women, newborns, children and health workers.
  - Quantifying the impacts on human health
  - Carrying out cost-benefit analysis of potential interventions (such as early warning systems)
- New tools to help manage and adapt to heat health risks.
- Prioritized indicators for countries to integrate into their national monitoring plans.
- Policy briefs and recommendations to help integrate HIGH Horizons findings into policy mechanisms at the local, national and EU levels.

What are we asking of policymakers:

Policymakers have a duty to protect human health and reduce risks to health from extreme heat caused by climate change, for instance by:

- Sharing information about health risks in a way that increases understanding and enables everyone to make informed choices to protect their health and wellbeing
- Setting up and using tools such as early warning systems to provide real-time updates, warnings, messages and recommendations to local populations in a way that allows vulnerable groups to take actions and adapt to current risks
- Putting in place strategies to mitigate and adapt to climate change, for example through climate resilient health systems

One critical element at the heart of HIGH Horizons policy recommendations is the need for a systemic approach, and for policymakers to work together across sectors (environment, health, education, etc.), as well as for policymakers to collaborate with industry, civil society and local populations, to build a holistic response to this systemic issue.

Policy engagement:

HIGH Horizons will engage with policymakers throughout the course of the project through workshops at the local, national and EU level. We will seek input to co-create policy messaging and recommendations, as well as insights into the HIGH Horizons tools and recommendations, to ensure that they are fit-for-purpose.

3.2.5 IDAlert

IDAlert aims to unite leading groups and individuals in Europe from academia, policy, and practical applications. The goal of the project is to ensure that key stakeholders have easy access to timely, accurate, spatially relevant data, disaggregated by socio-economic parameters, and tools, that enable monitoring of climate-sensitive zoonotic diseases and improved design of policies and interventions. The project outcomes will enhance anticipation, forecasting and understanding of future risks of disease emergence and spread. An important sub-objective is to highlight changing patterns of societal inequalities in Europe, so that pathways to reducing inequalities, for example, through targeted risk reduction, can be identified.

Background:

Emergence and transmission of pathogens that cause infectious diseases is an increasing problem in Europe, fueled by the upward trends of key drivers associated with global environmental change, including anthropogenic climate change, travel and tourism, trade, but also AMR, food safety, and societal and environmental transformations. To address these new and evolving challenges, a paradigm shift is required, in which animal, human, and environmental change interactions are addressed from an EcoHealth and One Health systems perspective. The IDAlert consortium integrates climate change, EcoHealth and One Health perspectives to tackle the emergence and transmission of pathogens and spread of zoonotic pathogens. Building climate resilience against emerging infectious diseases in Europe and beyond is an important element of the needed strategy. To this end, IDAlert will combine empirical methods with expert assessment to co-create indicators, EWS, policy options, and evaluations of adaptation and mitigation strategies. This process is defined by stakeholder needs assessment, collective prioritization, inclusive decision making, participatory research, and shared knowledge generation. It involves diverse stakeholders from different disciplines, sectors, and level of decision authority and is based on mixed methods from both natural and social sciences using mutual quality control of scientific rigor, social robustness, and practical relevance.

Knowledge gaps we are filling:

- IDAlert will provide knowledge to build resilience against emerging infectious disease threats in the following areas:
- Indicators for monitoring changing climatic suitability for the transmission of infectious diseases, connectivity with endemic areas and the frequency and intensity of extreme climatic events.
- Innovative surveillance tools, EWS and predictive models to anticipate the risk of emergence and spread of infectious diseases at the regional and local level.
- Evaluation of nature-based solutions, urban design, and disease control measures
- App-based citizen science tools to monitor disease vectors (e.g. mosquitoes and ticks)
- Infectious disease co-benefits and unintended consequences of measures to mitigate and adapt to climate change.
- Projection of indicators of future risks under climate change scenarios.

What are we providing to policymakers:

IDAlert is carrying out a scoping review of European and national level climate-relevant policies to identify and map the co-benefits and unintended consequences of mitigation and adaptation measures on climate-sensitive infections disease outcomes. Understanding the influence of climate measures on zoonotic disease transmission, human exposure and vulnerability to infectious disease is the first step towards the development of a decision support tool that will enable policymakers to assess the impact of climate policies on infectious disease.

IDAlert will provide scientific evidence and uptake of research results into relevant policies at EU, national and regional level.

- IDAlert indicators have been incorporated in the climate, water, and health EEA policy report due to be published in May 2024.
- For the Lancet Countdown in Europe, the project is developing country fact sheets which will provide policy relevant summaries of the IDAlert indicators for policymakers.
- IDAlert will develop a decision support tool will be developed to enable policymakers to make rapid assessments of the impact of climate policies on infectious disease outcomes.
- Policy-relevant case studies will be used to demonstrate the validly of IDAlert decision-support tools at the interface of human, animal, and environmental health according to a One Health and EcoHealth approach in five hotspots, with different ecological settings and climate-induced disease threats, in Spain, Greece, The Netherlands, Sweden, and Bangladesh. With local stakeholders in each site, IDAlert plans to monitor, track, forecast and simulate past, present and future climate-induced risk of emergence and transmission of pathogens.

- National and sub-national-level indicators for EU-27 and neighbouring countries relevant to EU, national, and regional policies.
- IDAlert will identify a "sphere of influence" of relevant actors in citizens' daily life, including public and private health authorities, care providers, veterinarians, and environmental services at local, national, and European level. In collaboration with stakeholders, IDAlert will discern the main training, capacity building and strengthening needs, gaps, and barriers for each group.

What are we asking of policymakers:

IDAlert is asking policymakers to engage with the project from its start, by being involved in our efforts to design useful and effective indicators that track the spread of infectious diseases linked to both the changing climate and efforts to tackle climate change. This has been enabled through stakeholder workshops and events since the start of the project. They are also asked to use and take into account the evidence generated in the project in their decision making.

IDAlert is further engaging with policy-makers to study and evaluate how interventions in the urban and natural environment affects the risk of vector-borne diseases. It further engages with policy-makers to discuss and facilitate sharing and broader uptake of new surveillance activities, such as citizen science engagement of tick and mosquito borne diseases.

Policy engagement:

IDAlert will engage with policymakers during the whole duration of the project, and mainly engage in a two-way approach through various targeted events such co-creation workshops and webinars. Targeted online and offline capacity building activities will also be developed i.e. virtual amazing sessions, guidelines, and policy briefs.

Policymakers are directly involved in our case study sites, taking part in the interventions that are carried out and being informed of the research and new evidence generated. Additionally, we aim to present findings to Members of the European Parliament in Brussels, seeking support for standardised policy measures. This multifaceted strategy ensures our research translates into practical policy measures for societal benefit.

Highlights:

- IDAlert will co-design and co-develop, with key stakeholders, novel pan-European high-resolution spatio-temporal indicators that track climate-induced emergence, transmission and spread of zoonotic pathogens in Europe; and climate hazards, population exposure, and vulnerabilities to infectious diseases over time, disaggregated at the national and sub-national level.
- IDAlert will develop a decision support tool to enable policymakers to make rapid assessments of the impact of climate policies on infectious disease outcomes.
- The project will demonstrate and track, through indicators, the co-benefits, and negative impacts of national and EU-level upstream climate policies on zoonotic disease transmission hazards, exposures, and vulnerabilities.
- IDAlert monitoring efforts complement passive surveillance by triggering active surveillance that identifies symptom onset in the primary case or the earliest epidemiologically linked case.
- IDAlert will integrate and model novel data streams along with traditional surveillance data to improve the accuracy and the spatio-temporal resolution of risk estimates provided to public health stakeholders at local, national, and regional levels and to help guide vector and zoonotic disease management.
- Support stakeholders to design sustainable long-term upstream solutions, such as infrastructural changes to the urban landscape in line with the European Green Deal. At the local level, WP5 will comprehensively assess policy processes and choices that operationalize country-level strategies to support the EU Adaptation strategy.

- Project the long-term economic benefits and costs of health interventions and adaptation in the health sector under various climate change scenarios.
- IDAlert will co-develop tailor-made training materials and ensure effective capacity strengthening and building and ensure that the training materials are widely accessible to the general public and target groups, and accessible to stakeholders outside of Europe as part of the international cooperation in capacity strengthening.
- Engage with stakeholders to develop and test out novel citizen science solutions for vector-borne disease surveillance and control.

3.2.6 TRIGGER

TRIGGER will deepen understanding of the complex connections between climate change and human health, and it will use this knowledge to advance society uptake at both personal and policy level. The ambition is to create a new international climate monitoring service for global health protection.

Aim:

TRIGGER aims to identify, monitor, quantify, and assess direct and indirect health impacts of climate change and related policies by collecting health, climate-related, and socio-economic data. Research findings are shared with policymakers, health practitioners, and citizens to co-create workable tools, guidelines, policy briefs, support evidence-based policymaking, and education addressing climate-health impacts.

Background:

The WHO estimates that the direct damage costs of climate change for human health are between 1.7 and 4 billion euros by 2030. Climate-induced health emergencies press for evidence-based knowledge, tools and technology to equip health services, citizens and policymakers.

Research gaps:

- Climate-health connections are complex; a clear demonstration of the health impacts of climate change and related policy actions is still missing; especially mental health and socio-economic factors are understudied.
- There is a lack of user-friendly tools for effectively exploring, monitoring, quantifying and evaluating the consequences of climate change and policy actions.
- Policies aimed at climate change mitigation and adaptation lack comprehensive assessments of their costs, benefits and risks.

What are we providing to policymakers?

- New scientific evidence:
    - Trans-disciplinary knowledge about direct and indirect health effects of climate change.
    - A comprehensive assessment of the costs, benefits, and risks of climate change mitigation and adaptation policies, and their impact on mental health, socio-economic and environmental factors.
- New, user-friendly tools:
    - To access and use scientific data on climate-related health impacts.
    - To monitor health and climate-related variables (e.g., weather, air quality).
    - To predict and respond to the most acute health impacts of climate change, and to assess costs and benefits of climate policies.
    - Early warning systems (EWS) to reduce exposure to climate-related health threats.
- Policy recommendations and communication material:
    - A policy brief series at local, national and EU level with evidence-based recommendations.

- Guidelines and tailored best practices to prevent and mitigate climate-induced health impacts.
- Protocols for improved response and preparedness of the health system to climate hazards.
- Co-created materials (e.g., publications, online courses, a serious game) to educate policymakers, health providers and citizens about climate-related health threats.

What are we asking of policymakers?

1. General recommendations, to be enhanced through TRIGGER's research results:
   - Engage with TRIGGER to co-develop tools and communication material to equip health services, citizens and policymakers for climate-health emergencies
   - Support research on the health impacts of climate change and related policies, including the impact on mental health and socio-economic outcomes
   - Base policymaking on solid scientific evidence and on comprehensive assessments of costs, benefits and risks of climate-health policies

2. More specific recommendations based on policy analysis at EU and international level

Policy engagement:

TRIGGER will engage policymakers in project workshops and the co-development of materials to support policymaking, including the aforementioned guidelines, policy brief series, and educational materials. Policymakers will also be involved in the co-creation of cost-benefit tools, to select key policy recommendations and identify priorities for policy transformation.

Highlights/pillars:

- Build systemic knowledge through trans-disciplinary investigations
- Ensure that research results are well-integrated and usable
- Generate workable tools and practical know-how to monitor, predict and mitigate health risks related to climate change

climate-health cluster

Funded by the European Union