SESSION 4: SUSTAINABILITY – CLIMATE CHANGE AND PUBLIC HEALTH

Moderated by Dr. Sofia Viegas

INTRODUCTORY SPEECH

Prof. Aamer Ikram, IANPHI
EB Strategic Advisor

PRESENTATION OF THE IANPHI CLIMATE CHANGE AND PUBLIC HEALTH COMMITTEE AND ITS WORK

Dr. Sébastien Denys,
Director of the Environmental and Occupational Health Division, Santé publique France, and Chair of the IANPHI Thematic Committee on Climate Change and Public Health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

The Climate Change and Health Committee .... A Recent Story

From an informal working group to a IANPHI thematic committee

- Climate change included in the IANPHI strategy and action plan 2021-2025
- WG on climate change and public in 2021 - transformed into an IANPHI standing committee in 2022
- Chair Dr Sébastien Denys, Santé publique France and vice-chair Dr Maria Da Luz de Mima Menonça, Insituto Nacionla de Saude Publica, Cabo Verde

THE STRATEGY AT A GLANCE

OUR MISSION

COLLECTIVELY BUILD PUBLIC HEALTH CAPACITY AND CAPABILITIES BY CONNECTING, DEVELOPING AND STRENGTHENING NATIONAL PUBLIC HEALTH INSTITUTES WORLDWIDE

OUR VISION

A GLOBAL COMMUNITY OF INTER-DEPENDENT AND TRUSTED NPHIS AS SCIENTIFIC ADVISORS WORKING TOGETHER TO PROTECT AND IMPROVE THE PUBLIC'S HEALTH AND BUILD A MORE EQUITABLE WORLD

OUR STRATEGIC PRIORITIES

STRENGTHEN THE PROFESSIONAL RELATIONSHIPS WITHIN IANPHI'S UNIQUE GLOBAL FORUM

HARNESS THE COLLECTIVE EXPERTISE OF MEMBERS TO DEVELOP PUBLIC HEALTH CAPACITY GLOBALLY

ENGAGE, SUPPORT AND GROW IANPHI'S DIVERSE AND UNIFIED MEMBERSHIP BASE

ADVOCATE GLOBALLY AND AT COUNTRY LEVEL FOR NPHIS AS KEY PUBLIC HEALTH ACTORS

BUILD AN AGILE ASSOCIATION THAT SUPPORTS MEMBERS THROUGH CHANGE

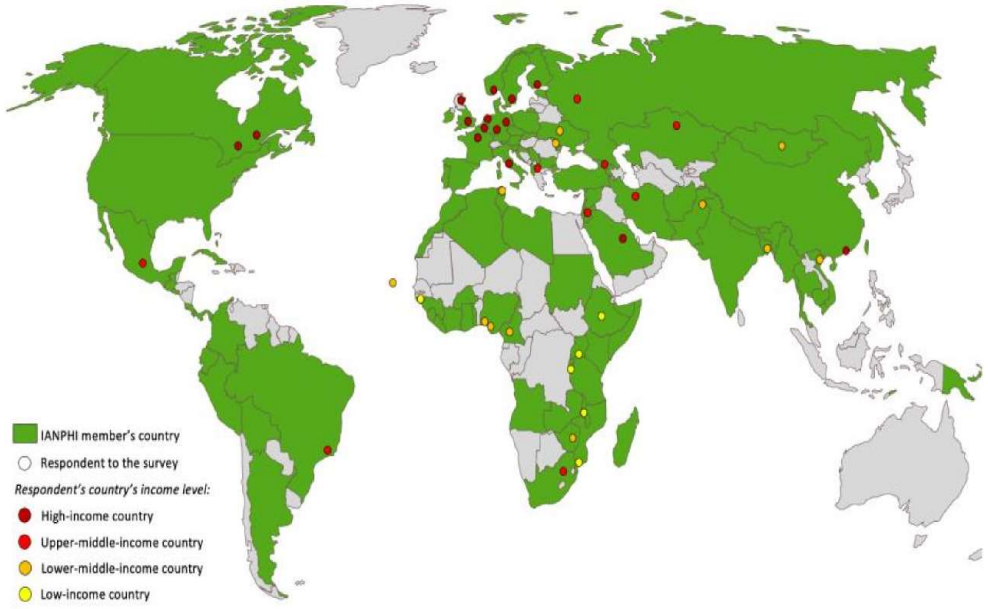
OUR VALUES

AN INCLUSIVE AND INDEPENDENT PROFESSIONAL ASSOCIATION WHICH PROMOTES AN EVIDENCE-BASED APPROACH TO PUBLIC HEALTH AND SCIENTIFIC EXCELLENCE

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

A Recent Story that started with a survey

- April-June 2021: answers from 43 NPHIs
- NPHIs are already engaged in climate change and health activities
- Yet, very few are considered as key climate actors and have the necessary resources
- NPHIs have an important role to play to promote cross-sectoral approaches on climate, biodiversity and health, and to develop international collaborations



IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Climate change is one of the greatest public health opportunity

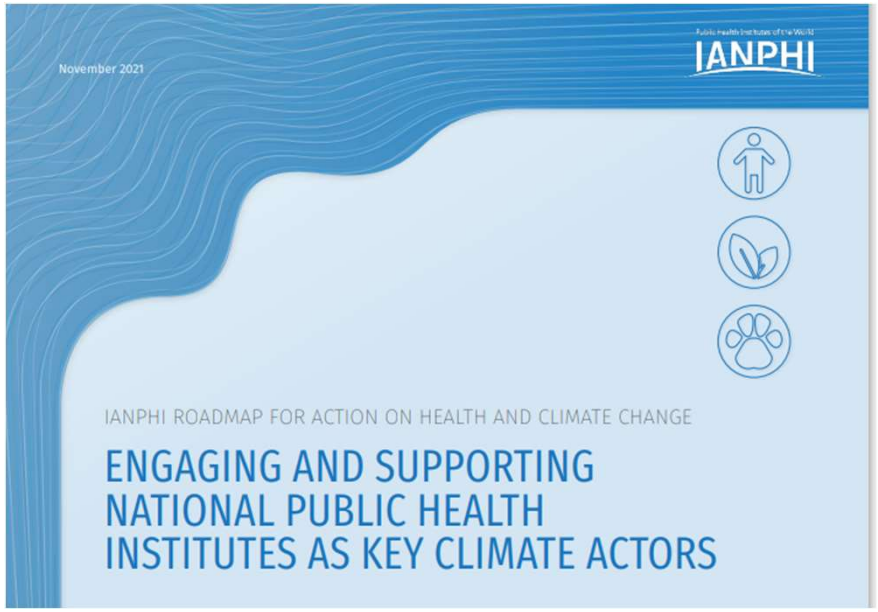
- Limiting the increase in global average temperature to 1.5°C and protecting biodiversity are essential to the health and well-being of current and future generations
- Climate action is a public health intervention
- Recovery from the COVID-19 pandemic offers an unparalleled opportunity
- Health in all climate policies and climate in all health policies!
- Climate and health benefit from actions on: food systems and diets, limiting air pollution, access to clean water, sanitation and hygiene, transport, protection of natural ecosystems…

IANPHI

ANNUAL MEETING

February 7-8, 2024 | KIGALI, RWANDA

The Untapped Potential of National Public Health Institutes as Key Climate Actors



THE LANCET
Public Health

Volume 7, Issue 3, March 2022, Page e209

Correspondence

Public health institutes and the fight against climate change

Mathilde Pascal [a] ✉, Revati Phalkey [b], Louise Rigal [d], Amandine Zoonekyndt [e], Arnaud Mathieu [a], Emma L Gillingham [b], Sébastien Denys [a], Isabel Oliver [c], Geneviève Chêne [g], Duncan Selbie [f]

Show more

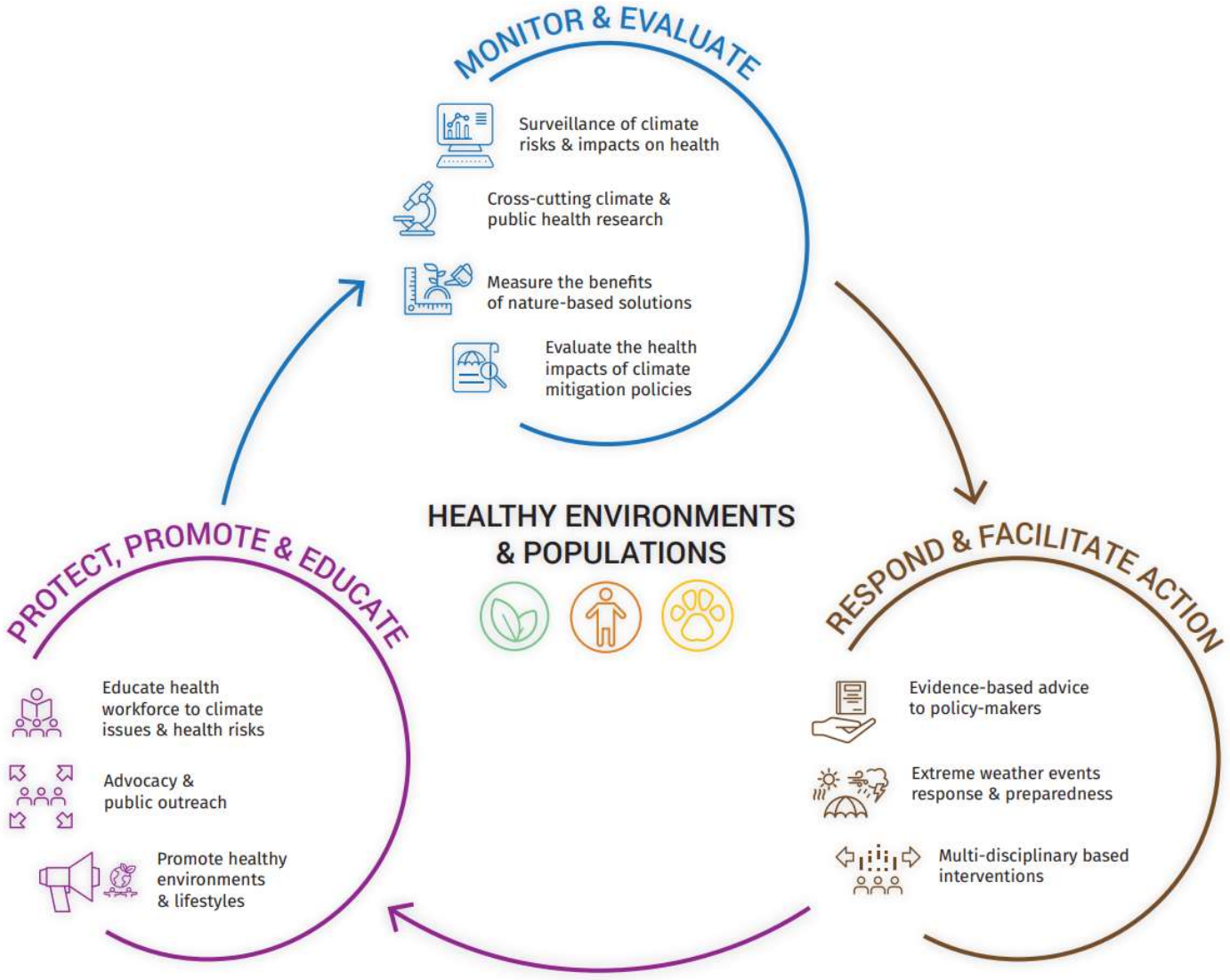
IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

IANPHI's commitments to improve climate change and public health interventions

- Limiting the increase in global average temperature to 1.5°C and protecting biodiversity are essential to the health and well-being of current and future generations
- Climate action is a public health intervention
- Recovery from the COVID-19 pandemic offers an unparalleled opportunity
- Health in all climate policies and climate in all health policies!
- Climate and health benefit from actions on: food systems and diets, limiting air pollution, access to clean water, sanitation and hygiene, transport, protection of natural ecosystems…

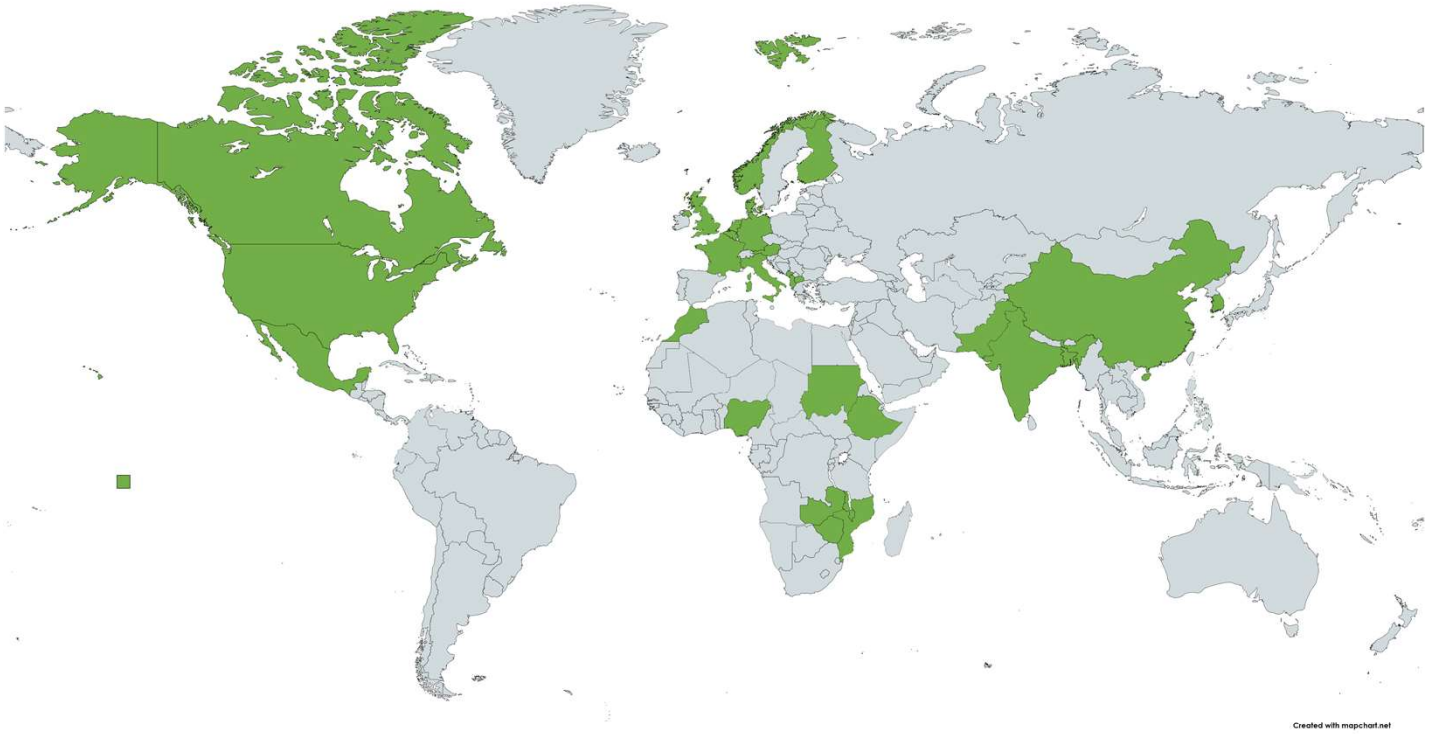
IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

How National Public Health Institutes contribute to climate adaptation and mitigation ?



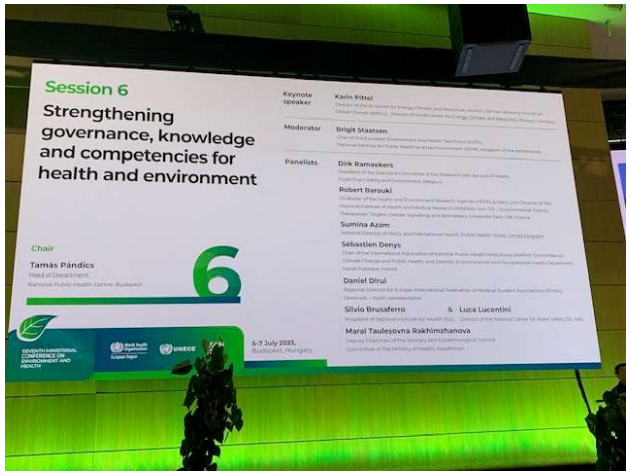
IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Countries represented in the committee



IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Dissemination (1/2)

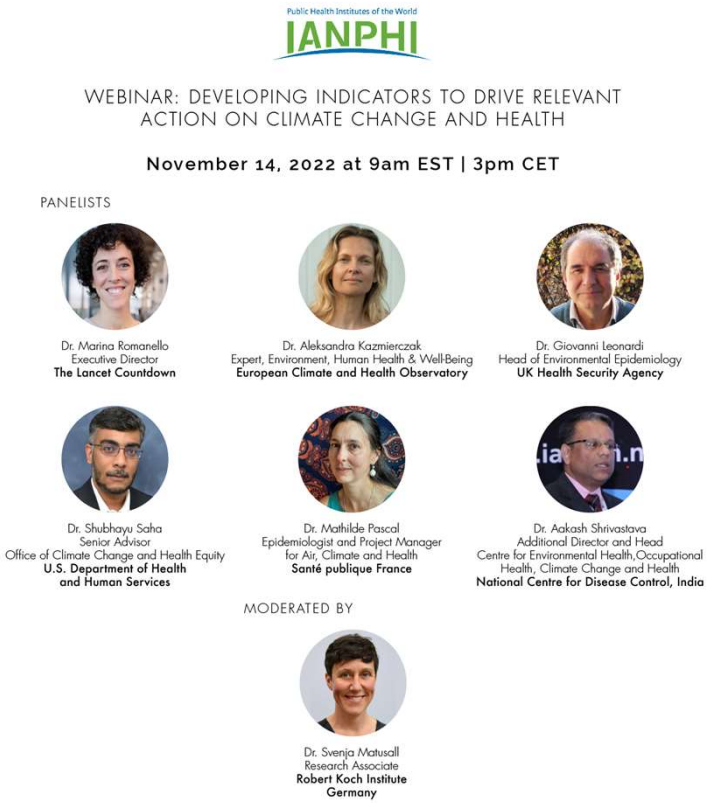


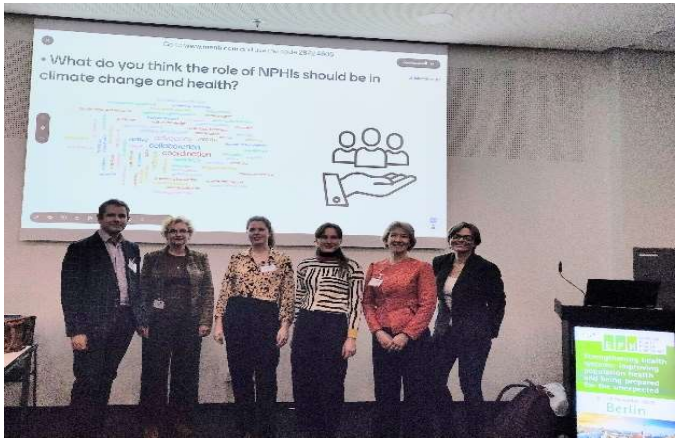
IANPHI

ANNUAL MEETING

February 7-8, 2024 | KIGALI, RWANDA

Dissemination (2/2)





Eupha Berlin 2022

Eupha Dublin 2023

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

A committee interacting with the ecosystem

European Climate and Health Observatory

World Health Organization | Europe

WORLD METEOROLOGICAL ORGANIZATION
Weather Climate Water

ASPHER
The Association of Schools of Public Health in the European Region

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Coming soon in 2024…

- Paper on extreme climate events and NPHIs
- Collaboration with EEA and potentially WMO Europe and WMO - Assessing surveillance capacities and methods used to estimate excess mortality and morbidity during heatwaves

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Challenges in the upcoming months

- Keep the committee active and broaden its composition
- Broaden to other regions the external partners commitments
- Funding to organize in-person meetings

THE ENBEL PROJECT

COMMUNICATING CLIMATE CHANGE AND HEALTH

Sonja Myhre, PhD, MsPH,
Senior advisor
Norwegian Institute of
Public Health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Presentation objectives

ENBEL – a unique approach

Materials, methods, and milestones

Three key takeaways

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

WHAT IS ENBEL?

- EU Horizon 2020-funded project
- Consortium of 17 partners, 14 countries
- Nexus of climate change and health
- Transdisciplinary approach
- Research focus in the Arctic, Europe, East and Southern Africa, South and East Asia, and North, South and Central America

ENBEL
Connecting
HEALTH &
CLIMATE
CHANGE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101003966.

Research projects represented in ENBEL

Belmont Forum

Health effects and associated socio-economic costs of increasing temperatures and wildfires - A global assessment (HEATCOST)

Arctic Community Resilience to Boreal Environmental change: Assessing Risks from fire and disease (ACRoBEAR)

Climate, heat and maternal and neonatal health in Africa (CHAMNHA)

Addressing Extreme Weather-Related Diarrheal Disease Risks in the Asia Pacific Region (AWARD-APR)

Protection Resilience Efficiency and Prevention for workers in industrial agriculture in a changing climate (PREP)

Community collective action to respond to climate change influencing the environment health nexus (CCCEHN)

Building New Tools for Data Sharing and Re-use through a Transnational Investigation of the Socioeconomic Impacts of Protected Areas (PARSEC)

EU H2020

Exposure to heat and air pollution in Europe – cardiopulmonary impacts and benefits of mitigation and adaptation (EXHAUSTION)

Integrated inter-sector framework to increase the thermal resilience of European workers (HEAT-SHIELD)

CAScading Climate risks: towards Adaptive and resilient European Societies (CASCADES)

Building European Communities' Resilience and Social Capital (BuildERS)

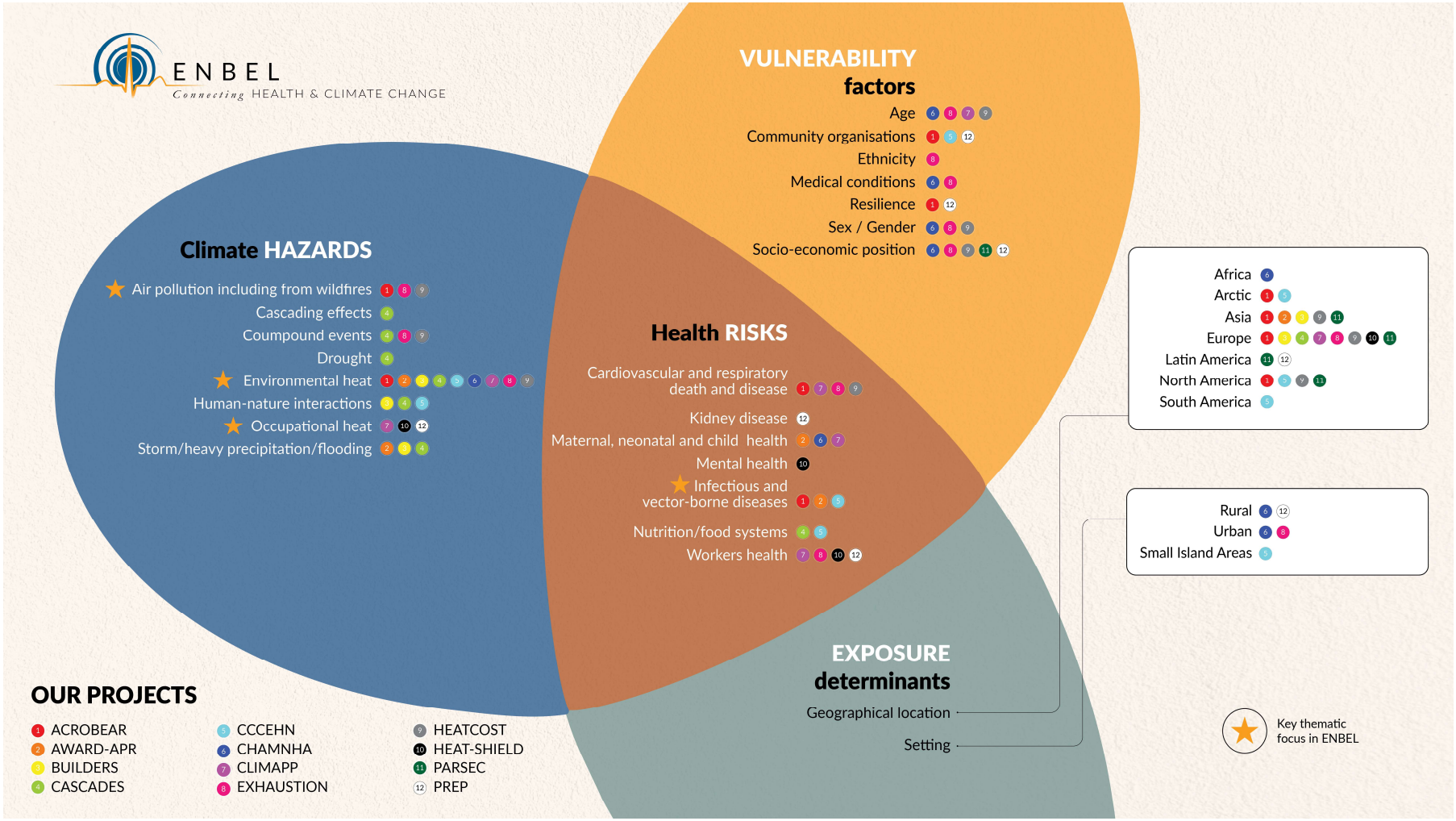
JPI Climate ERA4CS

Translating climate service information into personalised adaptation strategies to cope with thermal climate stress (ClimApp)

IANPHI

ANNUAL MEETING

February 7-8, 2024 | KIGALI, RWANDA



IANPHI

ANNUAL MEETING

February 7-8, 2024 | KIGALI, RWANDA

ENBEL

Connecting

HEALTH &

CLIMATE

CHANGE

Networking

Networking and coordination among researchers and stakeholders within the climate and health nexus.

Read more

Syntheses

Produce research syntheses on key policy-relevant questions and identify how consortia projects can fill knowledge gaps on climate change and health linkages.

Read more

Policy engagement

Target and engage with relevant EU, and national decision-makers and provide input into relevant EU policymaking processes.

Read more

Communication & Dissemination

Dissemination and communication of research knowledge and policy recommendations.

Read more

Focal perspective

Health impacts (8):

(heart and lung disease, heat, and air pollution, deaths from heat stress, diarrheal disease, vector-borne disease, schisotosomiasis, chronic kidney disease, pregnancy and newborns)

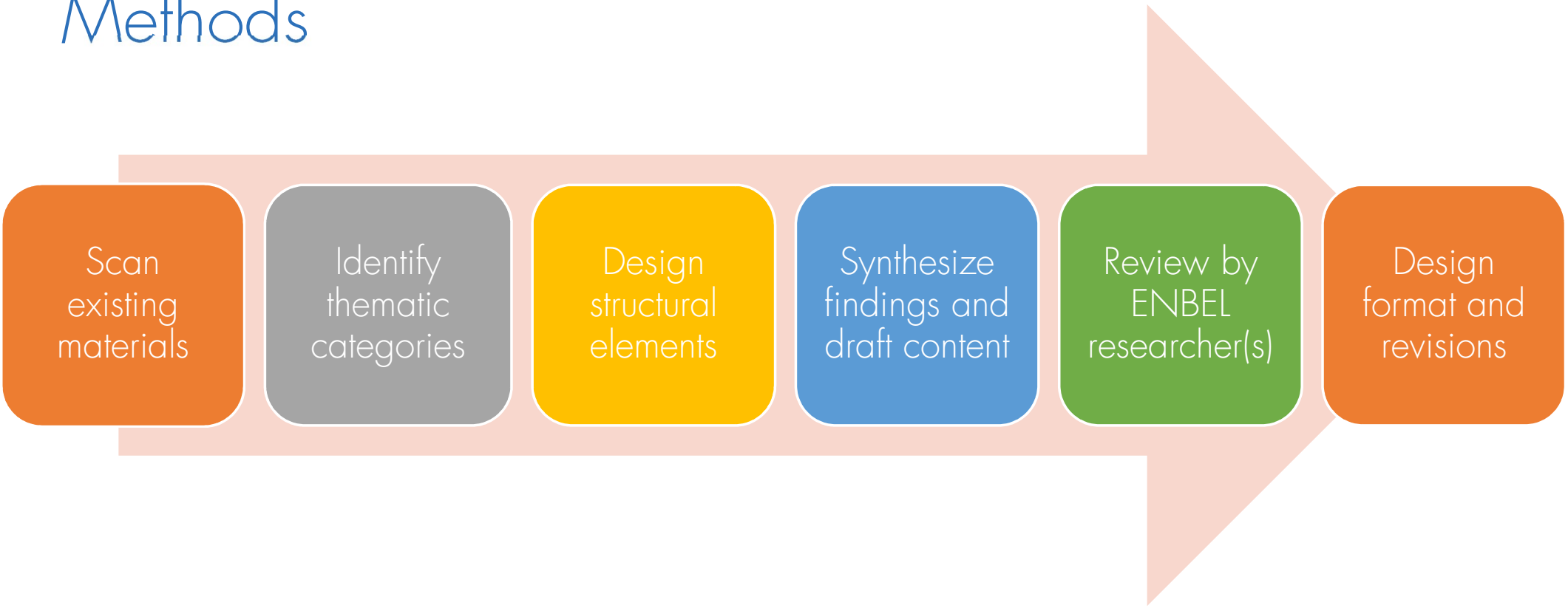
Indirect impacts (4):

(Livelihoods, occupations, life exposure)

Public health tools (2):

(Mobile health tools, early warning systems)

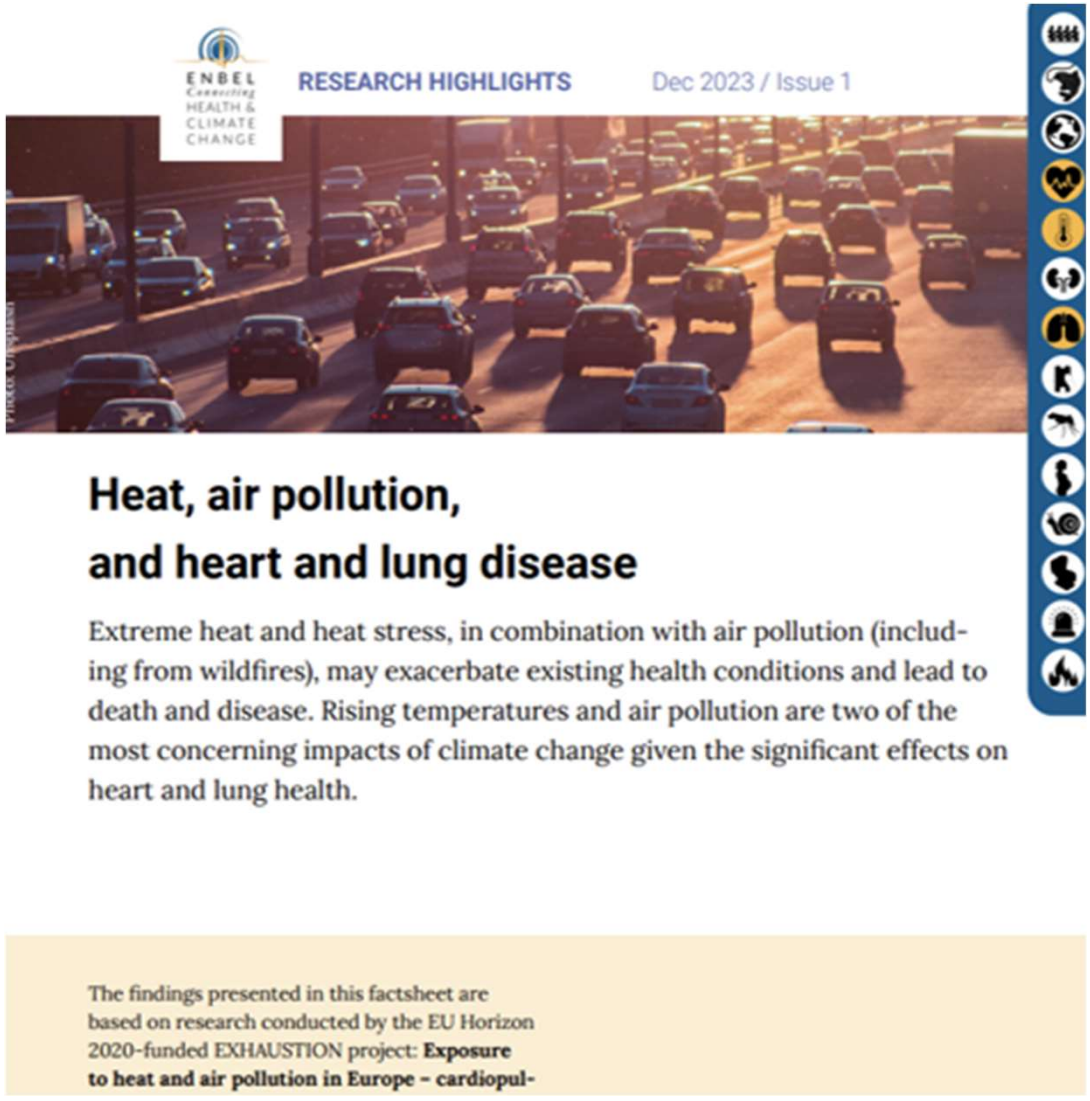
Methods


Scan existing materials
Identify thematic categories
Design structural elements
Synthesize findings and draft content
Review by ENBEL researcher(s)
Design format and revisions

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Key elements

- Simple, clear titles
- Icon bar
- Visual images
- Problem statement
- Research project/group
- Key findings



ENBEL Connecting Health & Climate Change

RESEARCH HIGHLIGHTS Dec 2023 / Issue 1

Heat, air pollution, and heart and lung disease

Extreme heat and heat stress, in combination with air pollution (including from wildfires), may exacerbate existing health conditions and lead to death and disease. Rising temperatures and air pollution are two of the most concerning impacts of climate change given the significant effects on heart and lung health.

The findings presented in this factsheet are based on research conducted by the EU Horizon 2020-funded EXHAUSTION project: **Exposure to heat and air pollution in Europe – cardiopul-**

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Key elements

- Research implications
- Who's most at risk?
- Conclusion
- More information
- Select publications

Implications of the research

- Extreme temperature-related deaths from climate change, exacerbated by air pollution, are linked to an increase in deaths throughout the world.
- Heat-health action plans and early warning systems should consider and incorporate specific air pollutants to refine thresholds and upscale levels of response. This ensures that the public is alerted to dangerous conditions and can take necessary measures to prevent avoidable health effects and deaths during periods of severe heat.
- Research findings reveal that more attention should be paid to hot and highly polluted days given the potential for health damage.

Who is most at risk?

- Vulnerable groups including the elderly, children, those who are socially isolated, and individuals with chronic diseases, are most at risk. Vulnerability also varies according to geographical location, personal surroundings (i.e., housing), and other factors such as socio-economic status.
- While the health impacts stemming from extreme temperatures are largely preventable, it is crucial that these vulnerable groups are alerted and adopt measures to protect their well-being, particularly during heatwaves.

Conclusion

These research findings underscore that extreme hot and cold temperatures are increasing deaths in many parts of the world. More importantly, the combined impact of high temperatures and air pollutants can intensify harmful health effects, particularly for respiratory and cardiovascular diseases. Thus, there is a critical need for policies and strategies to mitigate the devastating consequences of extreme temperatures. The evidence from the research supports strong mitigation efforts to reduce future

Photo: Istockphoto / H M Shahidul Islam

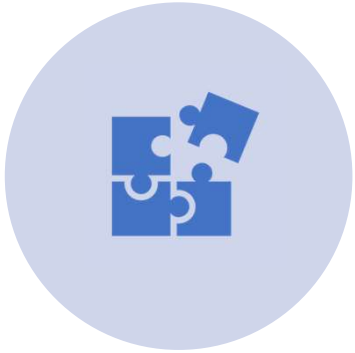
For more information

Websites:

- HEATCOST:
  cicero.oslo.no/en/projects/heatcost

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Impact



SNAPSHOT OVERVIEW

ACCESS TO RESEARCH FINDINGS

VISUAL DISPLAY OF INFORMATION

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Key Takeaway #1:

Impact on vulnerable groups

- Children and newborns
- Pregnant women
- Elderly populations
- Indigenous communities
- Pre-existing conditions
- Outdoor manual workers

ENBEL Connecting HEALTH & CLIMATE CHANGE

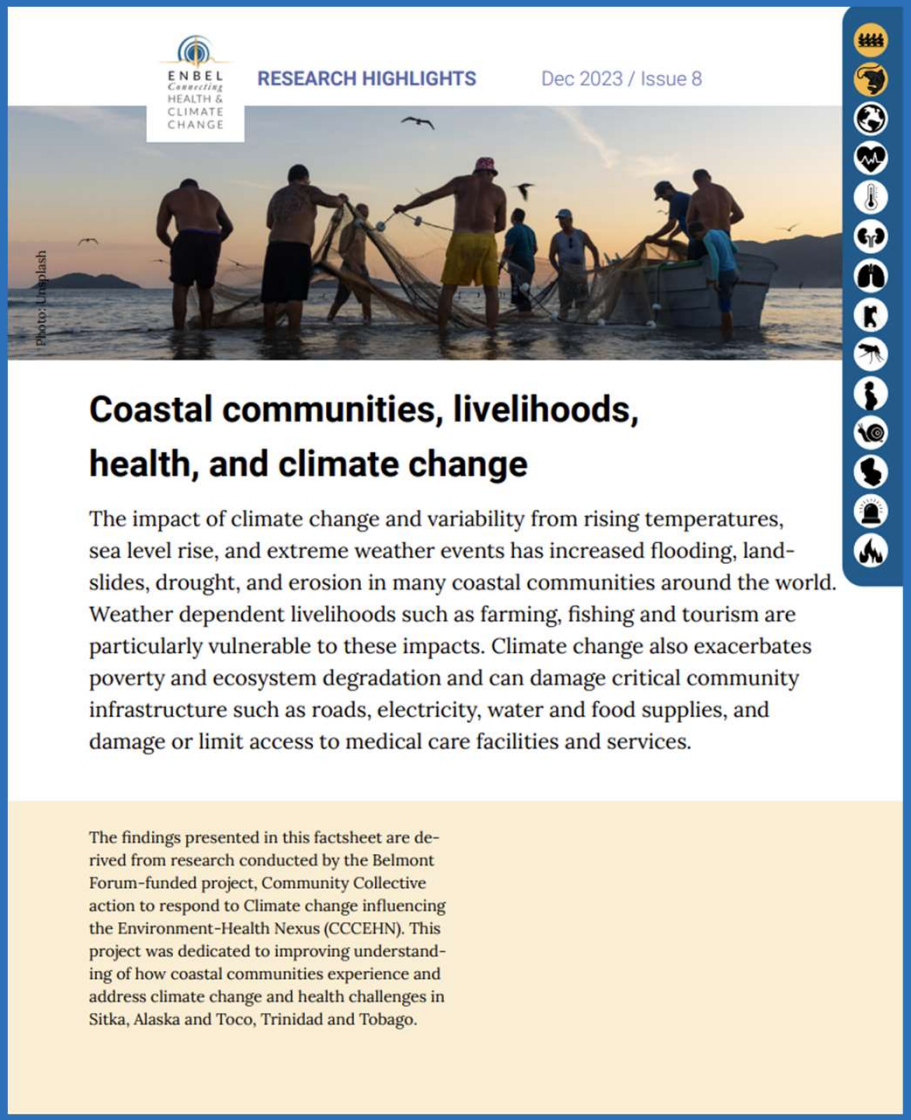
RESEARCH HIGHLIGHTS Dec 2023 / Issue 12

Photo: Unsplash

The impact of heat on pregnant women and newborns

Extreme weather events, including exposure to high temperatures, affect the health and well-being of pregnant women and can cause adverse birth outcomes. In many countries, women already experience extreme temperatures, and many have limited options to avoid working and staying in the heat. Most countries will experience more frequent and intense heatwaves, drought, and food and water insecurity. Therefore, it is important that maternal and neonatal health services and guidance consider heat risks and that heat health action plans include evidence-based interventions targeted at pregnant women and infants.

The findings presented in this factsheet are from research conducted by the Belmont Forum-funded CHAMNHA project: "Climate, heat, and maternal and neonatal health in Africa". This project includes partners from Burkina Faso, Kenya, South Africa, Sweden, Norway, United Kingdom, and the U.S. and studies the impact of heat on the health of



ENBEL Connecting Health & Climate Change

RESEARCH HIGHLIGHTS Dec 2023 / Issue 8

Photo: Unsplash

Coastal communities, livelihoods, health, and climate change

The impact of climate change and variability from rising temperatures, sea level rise, and extreme weather events has increased flooding, landslides, drought, and erosion in many coastal communities around the world. Weather dependent livelihoods such as farming, fishing and tourism are particularly vulnerable to these impacts. Climate change also exacerbates poverty and ecosystem degradation and can damage critical community infrastructure such as roads, electricity, water and food supplies, and damage or limit access to medical care facilities and services.

The findings presented in this factsheet are derived from research conducted by the Belmont Forum-funded project, Community Collective action to respond to Climate change influencing the Environment-Health Nexus (CCCEHN). This project was dedicated to improving understanding of how coastal communities experience and address climate change and health challenges in Sitka, Alaska and Toco, Trinidad and Tobago.

Key Takeaway #2:

Cascading consequences

Livelihoods

- Farming, fishing, ecotourism
- Other occupations
- Food security, diet and nutrition

Infrastructure:

- roads
- electricity supplies
- water quality
- access to medical facilties

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Key Takeaway #3:

The power of aggregation

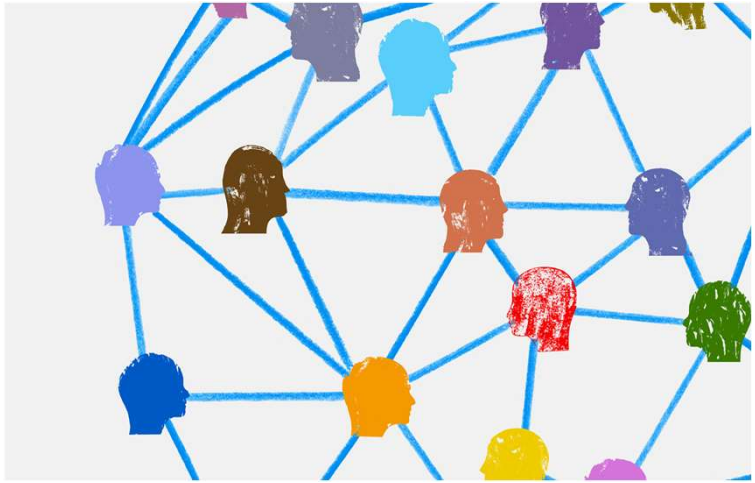
Research highlight series leverages projects for broader impact/influence

Coastal erosion in Tuvalu. Photo: Michael Coghlan

For more information

- Myhre, SL, Scobie, M, Meriläinen, E, Kelman, I, Gopinathan, U. (2023). Climate Change, Community Action, and Health in the Anglophone Caribbean: A Scoping Review. Public Health Rev 44:1605843. doi: 10.3389/phrs.2023.1605843
- Scobie, M, Myhre, S, Gopinathan, U, and Kelman, I. (2023). Agency in climate change adaptation and health governance in the Caribbean: local priorities and global agendas. Environmental Health, DOI: 10.1080/17565529.2021.1930509.
- Matthews, LJ., Clark-Ginsberg, A, Scobie, M, Peters, LER, Gopinathan, U, Mosurska, A, Davis, K, Myhre, S, Hirsch, Sk, Meriläinen, E, Kelman, I. (2023). Collective action by community groups: solutions for climate change or different players in the same game? Climate and Development. 15 (8), 679-691, DOI:10.1080/17565529.2022.2149254 .
- Meriläinen, E, Kelman, I, Peters, LER, and Shannon, G. (2022) Puppeteering as a metaphor for unpacking power in participatory action research on climate change and health. Climate and Development 14 (5), 419-430. DOI: 10.1080/17565529.2021.1930509.

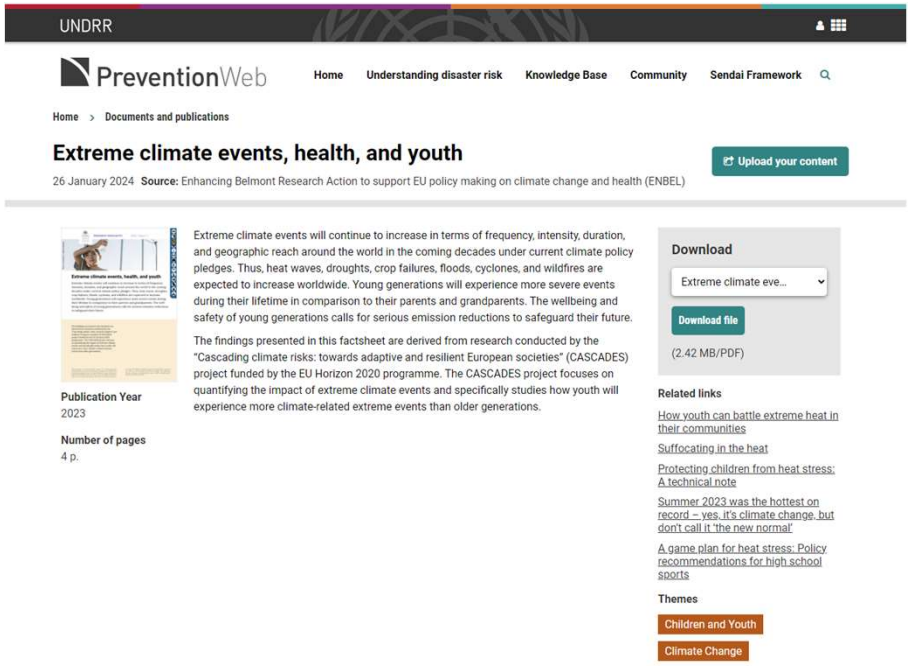
Milestones

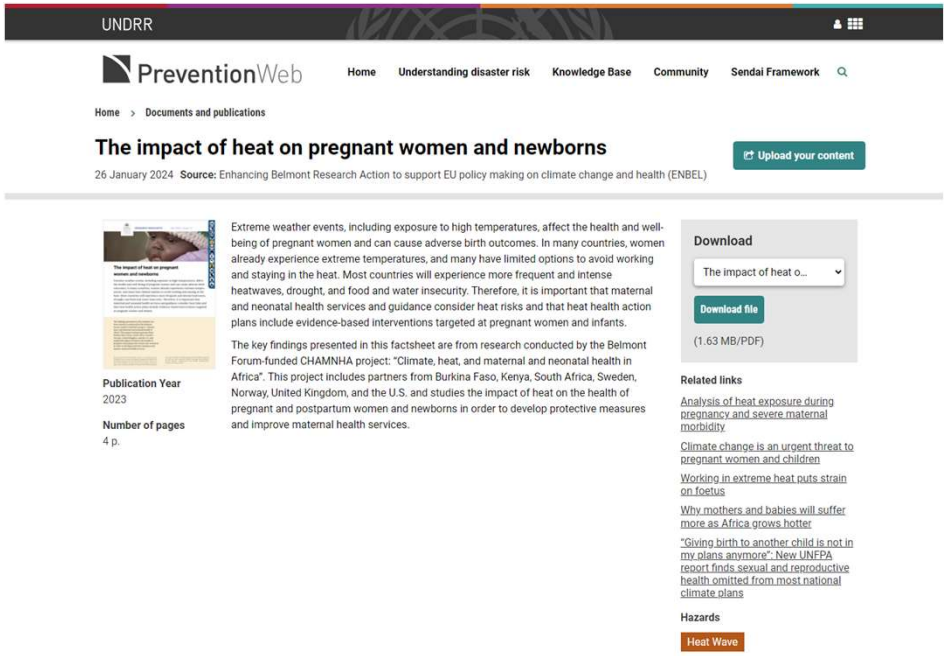


- Distribution at local, regional, global levels
- Engagement with diverse stakeholders
- Positive feedback by ENBEL researchers

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

UNDRR Prevention website





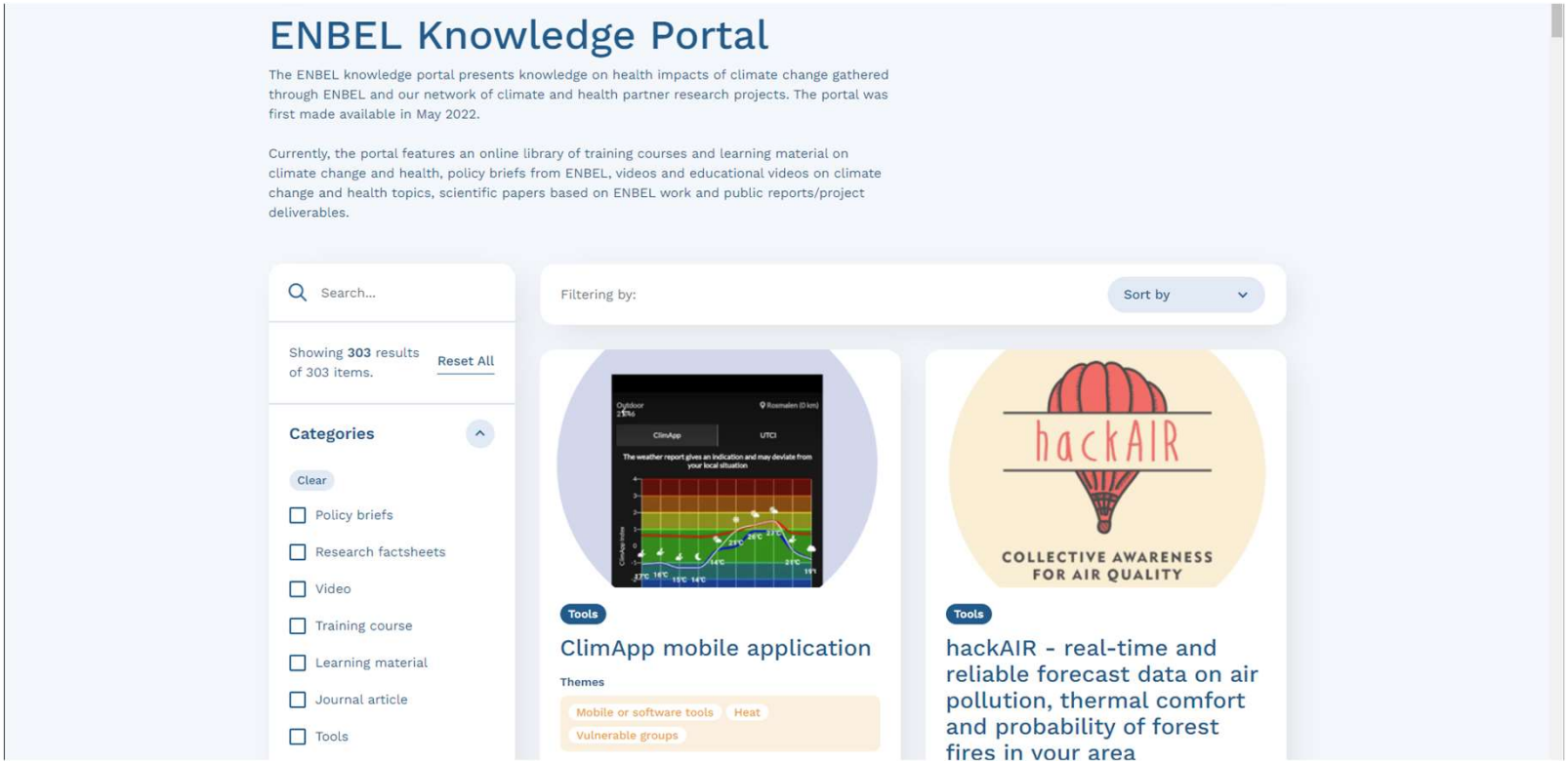
Limitations

- ENBEL research findings only
- English language only
- Other?

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

More ENBEL resources (enbel-knowledge.eu)

Policy briefs, videos, training courses, tools, articles, and reports



ENBEL
Connecting HEALTH & CLIMATE CHANGE

Educational material from the ENBEL project

The ENBEL project has developed different materials that could be used for educational purposes on climate change and health topics. Everything is available for download on the ENBEL knowledge portal enbel-knowledge.eu and free to use for anyone.

The **ENBEL research factsheet series** provides accessible summaries of research findings from the projects in the ENBEL network on a wide range of climate change and health topics, including e.g. the impact of heat on pregnant woman and newborns; wildfires, air pollution and heat; vector-borne disease and much more. Find the factsheet series on enbel-knowledge.eu

The ENBEL project has also developed **a series of short educational videos on climate change and health** topics to give more information on how climate change effects our health and what we can do about it. The videos cover topics such as climate change and air quality, heat health adaptation plans and protecting workers in a changing climate. The videos are available on YouTube.

Questions?

1. Can this series be useful in your settings?
2. Are there topics that should be included?
3. Do you have suggestions going forward?

Thank you!

STATUS REPORT ON CLIMATE CHANGE AND HEALTH FOR GERMANY, 2023

Kirsten Kelleher
Martin Mlinarić
Hildegard Niemann
Angelina Taylor
Thomas Ziese

Office for Climate Change and Health
Robert Koch Institute, Germany

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

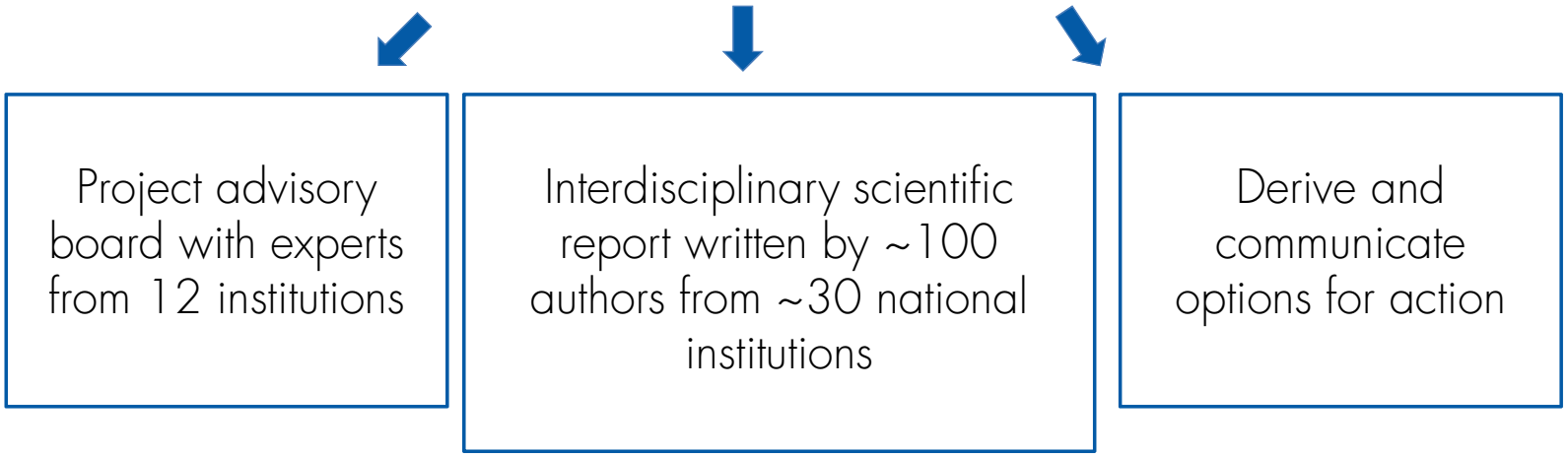
Overview

- Main objectives
- Content
- Communication
- Next steps

German status report on climate change and health

Status report – main objectives

- Objective: Provide current evidence for impact of climate change on health
- Target groups: experts in the field, public health service, decision-makers
- Three pillars: Network – Content – Communication



German status report on climate change and health

Journal of **Health Monitoring**

Journal of Health Monitoring · 2023 8(S3)
DOI 10.25646/11399
Robert Koch Institute, Berlin

Gerhard Adrian[1] Martin Dietrich[2], Birgit Esser[3], Andreas Hensel[4], Folkhard Isermeyer[5], Dirk Messner[6], Thomas C. Mettenleiter[7], Inge Paulini[8], Sabine Riewenherm[9], Lars Schaade[10], Ralph Tiesler[11], Lothar H. Wieler[12]

[1] German Meteorological Service
[2] Federal Centre for Health Education
[3] German Federal Institute of Hydrology
[4] German Federal Institute for Risk Assessment
[5] Thünen Institute
[6] German Environment Agency
[7] Friedrich-Loeffler-Institut
[8] Federal Office for Radiation Protection
[9] Federal Agency for Nature Conservation
[10] Robert Koch Institute
[11] Federal Office of Civil Protection and Disaster Assistance
[12] Formerly Robert Koch Institute

Submitted: 24.02.2023
Accepted: 24.03.2023
Published: 01.06.2023

Together we can counter the effects of climate change

Climate change is the greatest challenge facing humanity, threatening our livelihoods and our secure future. The impact of anthropogenic environmental change on human health and well-being is increasing. Public health systems worldwide need to address this significant and complex burden by strengthening both their capacity to act and their resilience.

As highlighted in the Roadmap of the International Association of National Public Health Institutes (IANPHI) and supported by the G7 health ministers in a communiqué, national public health institutes have a key role to play in climate change mitigation and adaptation [1, 2]. Nutrition and mobility are particularly relevant in this context, as health-promoting behaviour in these fields simultaneously aids climate protection, as does the transformation to sustainable and resilient (public) health systems. Within the framework of the German Strategy for Adaptation to Climate Change (DAS), health is an important topic when considering effective and sustainable measures for dealing with the climate crisis. Climate change affects many other fields that intersect with health, such as water management, construction or urban and regional development. Therefore, health-sensitive climate protection and climate adaptation require intersectoral cooperation and the continuous exchange between different actors in line with the ideas behind One Health and Health in All Policies [3, 4].

In this context, the German Status Report on Climate Change and Health is an important project that can help to address the health challenges of the climate crisis and to strengthen the cooperation between different institutions and authorities. We, the leaders of public authorities in Germany working on public health issues, consider interdisciplinary and intersectoral cooperation to be a key prerequisite for best addressing the health challenges of climate change. This implies the need for innovative and cooperative collaboration between different sectors, not only at the municipal, state and federal level, but also in terms of exchange between these levels.

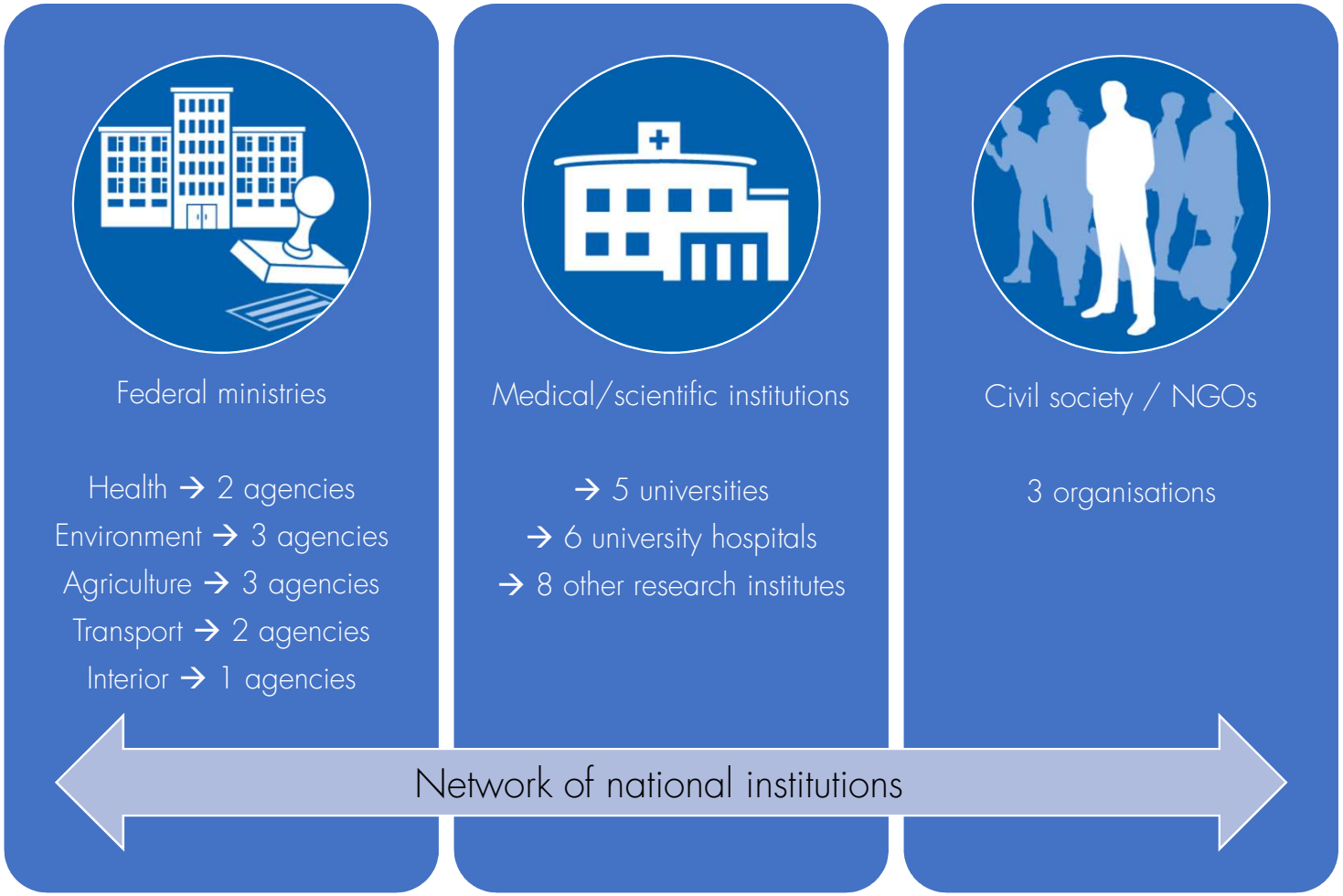
The German Status Report on Climate Change and Health 2023 is published in an article series in the Journal of Health Monitoring in three issues.

The first issue begins with an introductory article outlining the range of topics covered in the status report, and devotes four thematic articles to the influence of climate change on infectious diseases (vector- and rodent-borne diseases, waterborne infections and intoxications, foodborne infections and intoxications) and antimicrobial resistance.

In the second issue, six articles describe the influence of climate change on non-communicable diseases caused by heat and other extreme weather events such as floods, by increased UV radiation, by allergic diseases and by increased air pollution. The impact of climate change on mental health is also discussed.

The findings from these first two issues are incorporated into the contributions of the final issue. They examine health equity with regard to the effects of climate change, highlight the importance of target group-specific climate

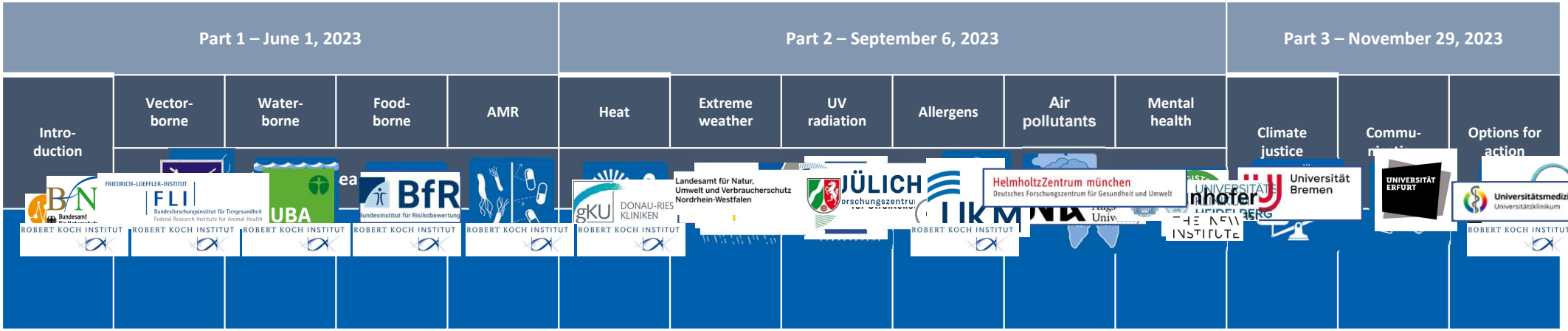
Author affiliations



German status report on climate change and health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Three-part series in the Journal of Health Monitoring

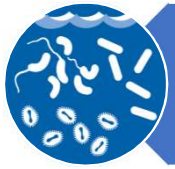


German status report on climate change and health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

www.rki.de/climatereport

Key messages of the status report: Part 1

	Examples
 Increasing temperatures, changing precipitation patterns, and human behaviour may influence the epidemiology of vector- and rodent-borne infectious diseases.	Increase of tick-borne encephalitis risk areas in Germany: 129 risk areas (2007) to 175 (2022)
 Climate change may lead to an increase in waterborne infections and intoxications.	Non-cholera *Vibrio* (NCV) infections are more common in hot summers, which are becoming more frequent
 An increase in foodborne infections and intoxications (e.g. via meat / seafood) is expected.	Optimal temperature for *Salmonella* growth: 35 - 37 °C
 Few studies available for Europe, but there are indications that the burden of diseases through antimicrobial resistance is increasing due to climate change.	Surgical Site Infections after operations are more common in Germany in warm (≥ 20 °C) than in cold months (< 5 °C) months

German status report on climate change and health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Key messages of the status report: Part 2

	Examples
In a worst-case scenario (RCP8.5), temperatures in Germany will rise by 3.0 – 4.2°C by the end of the century, compared to the reference period (1971 – 2000).	Significant numbers of heat-related deaths (18,800) were estimated for three consecutive years 2018 – 2020.
An increase in extreme weather events is expected in Germany, with impacts on health ranging from injury and death to mental distress, amplified by cascading risks.	Until the end of the century, 3.7 million people annually may be affected by coastal floods in Europe.
UV radiation can cause cancer. Individual exposure can change through climate change-related changes in atmospheric factors	Incidence in non-melanoma skin cancer has quadrupled in the last 30 years for men, quintupled for women in Germany.
Climate change influences occurrence, frequency, and severity of allergic diseases.	Sensitisation to ragweed pollen is expected to increase to 25% in Germany by middle of the century.
Climate change leads to increased air pollution. Health impact of air pollutants affect all organs of the human body.	Low air quality increases risk for cardiovascular disease, pulmonary, and respiratory diseases.
There is international evidence indicating an increase in psychiatric disorders following extreme weather events.	Suicide risk may rise on days following high temperatures.

German status report on climate change and health

Key messages of the status report: Part 3

Environmental and climate issues cannot be considered in isolation from social justice issues.

Examples

There are differences in exposure, biological sensitivity and adaptive capacity across different sociodemographic groups.

Perception of risk and type of media used correlate with Readiness to Act.

Health authority websites enjoy high level of trust but are not often used.

Recommendations and cost-effective strategies from preceding articles grouped into clusters and annotated into »options for action«

German status report on climate change and health

Journal of Health Monitoring

Journal of Health Monitoring · 2023 8(S6)
DOI 10.25646/11774
Robert Koch Institute, Berlin

Martin Mlinarić[1], Susanne Moebus[2], Cornelia Betsch[3,4], Elke Hertig[5], Judith Schröder[2], Julika Loss[1], Ramona Moosburger[1], Petra van Rüth[6], Sophie Gepp[7], Maike Voss[7], Wolfgang Straff[8], Tanja-Maria Kessel[9], Michaela Goecke[9], Andreas Matzarakis[10], Hildegard Niemann[1]

[1] Robert Koch Institute
Department of Epidemiology and Health Monitoring
Berlin, Germany
[2] University of Duisburg-Essen, Germany
University Medicine Essen
Institute for Urban Public Health
[3] University of Erfurt, Germany
Institute for Planetary Health Behaviour
[4] Bernhard Nocht Institute for Tropical Medicine
Health Communication
Hamburg, Germany
[5] University of Augsburg, Germany
Faculty of Medicine
[6] German Environment Agency
Subject area I 1.6 KomPass – Climate Impacts and Adaptation
Dessau-Roßlau, Germany
[7] Centre for Planetary Health Policy
Berlin, Germany
[8] German Environment Agency
Subject area II 1.5 Environmental medicine and health assessment
Berlin, Germany
[9] Federal Centre for Health Education
Cologne, Germany
[10] German Meteorological Service
Research Centre Human Biometeorology
Freiburg, Germany

Submitted: 06.07.2023
Accepted: 25.10.2023
Published: 29.11.2023

Climate change and public health in Germany – A synthesis of options for action from the German status report on climate change and health 2023

Abstract

Background: This article represents the conclusion of the updated German status report on climate change and health, which was jointly written by authors from over 30 national institutions and organisations. The objectives are (a) to synthesise the options for action formulated in the report, (b) to combine them into clusters and guiding principles, (c) to address the success factors for implementation, and (d) to combine the options for action into target parameters.

Methods: The options for action from the individual contributions of the status report were systematically recorded and categorised (n=236). Topical clusters were then formed with reference to Essential Public Health Functions, and options for action were assigned to them.

Results: Eight topical clusters of options for action and ten guiding principles were identified. These can be summarised in four overarching meta-levels of action: (a) cross-sectorally coordinated structural and behavioural prevention, (b) monitoring, surveillance, and digitalisation (including early warning systems), (c) development of an ecologically sustainable and resilient public health system, and (d) information, communication, and participation. The main success factors for implementation are the design of governance, positive storytelling and risk communication, proactive management of conflicting goals, and a cross-sectoral co-benefit approach.

Conclusions: Based on the status report, systematically compiled target parameters and concrete options for action are available for public health.

This is part of a series of articles that constitute the German Status Report on Climate Change and Health 2023.

CLIMATE PROTECTION · CLIMATE CHANGE ADAPTATION · PUBLIC HEALTH · CROSS-SECTORALITY · CO-BENEFITS · COMMUNICATION

German status report on climate change and health

Figure 2 (left)
Topical clusters for n=62 options for action in the area of infectious diseases and antimicrobial resistance
Source: Own representation

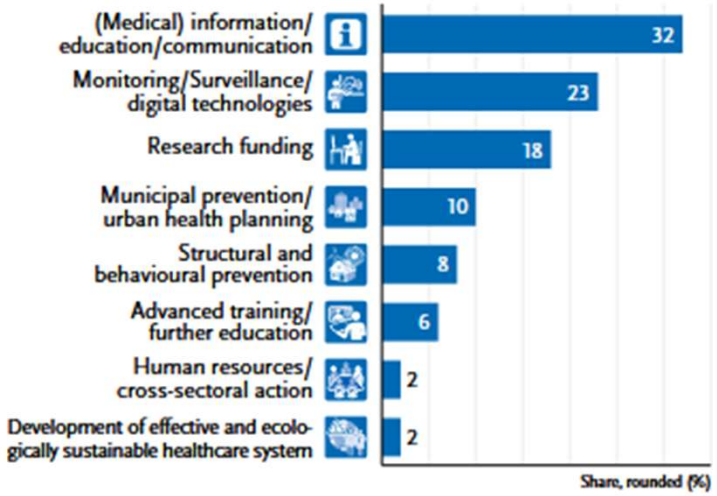
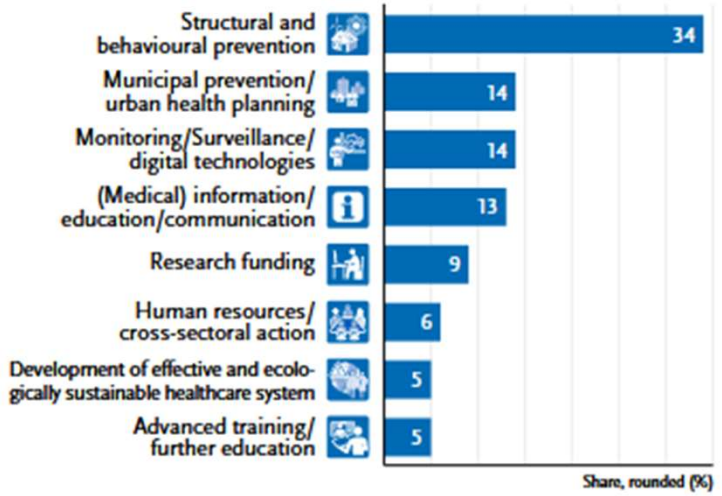


Figure 3 (right)
Topical clusters for n=174 options for action in the area of non-communicable diseases/mental health
Source: Own representation



German status report on climate change and health

Options for action – main take home messages

Governance: development of legal frameworks for coordinated structural and behavioural prevention in line with Health-in-All-Policies approach

Provision of human and financial resources for the implementation of cost-effective structural and behavioural prevention

Surveillance at the local, state, and federal levels: climate, environment, and health monitoring → focus on aspects of social equity

Evidence-based and target group-oriented education, information, and communication measures + participation of affected and involved groups

German status report on climate change and health

Success factors for implementation

1. Design of Governance (policies)
2. Positive storytelling and risk communication
3. Proactively managing conflicting goals and resistance
4. Cross-sectoral co-benefit approach

Target groups and means of communication

Scientific community

Public health service | decision-makers

General public | settings | vulnerabilties

Expert consultations

Conferences/workshops

Federal Centre for Health Education

German status report on climate change and health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Consultations with representatives from local authorities

- Three **online expert consultations** in collaboration with CPHP

  - Focus on relevant topics from the status report
  - Good practices from municipalities (focus »ÖGD« – health service sector)
  - Opportunity for participation and refinement of options for action
  - Networking and discussion amongst actors at the municipal level

- + an **online survey** to provide evaluation and feedback on the local needs

CPHP
Centre for Planetary Health Policy

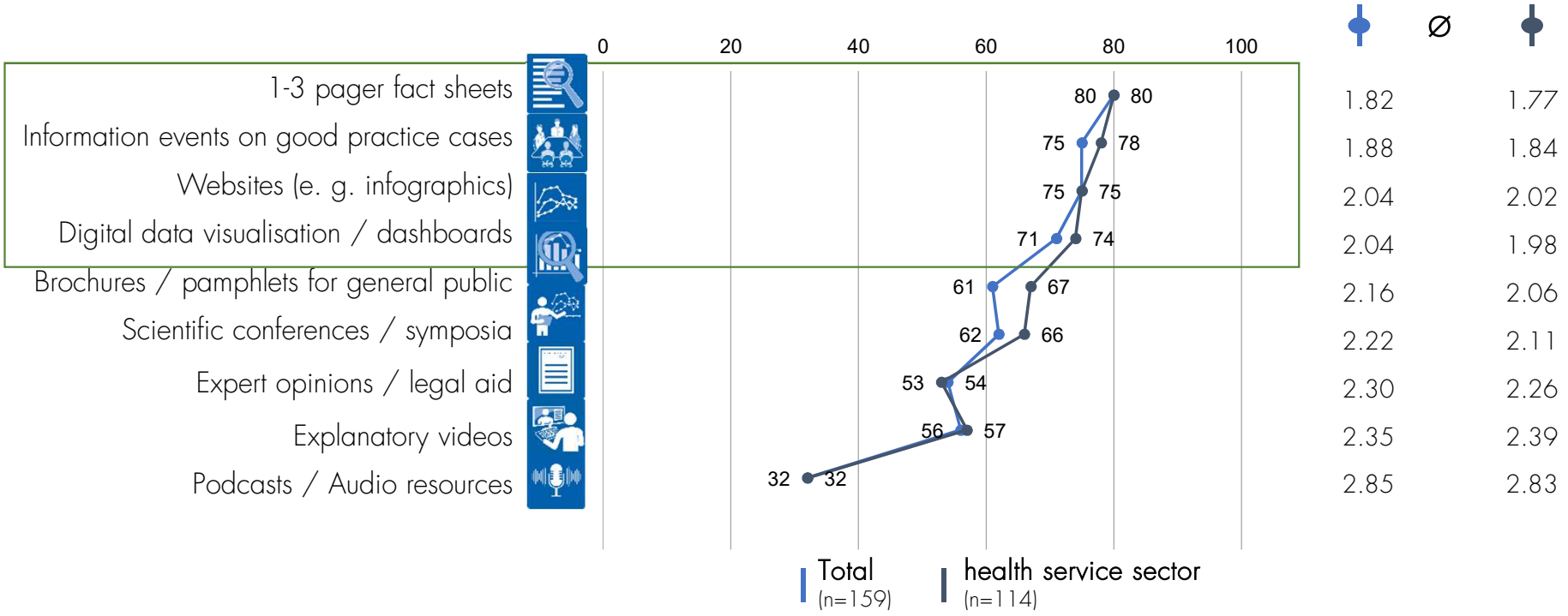
IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

How could your current and future activities be supported?

German status report on climate change and health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Which resources would be useful for your work?

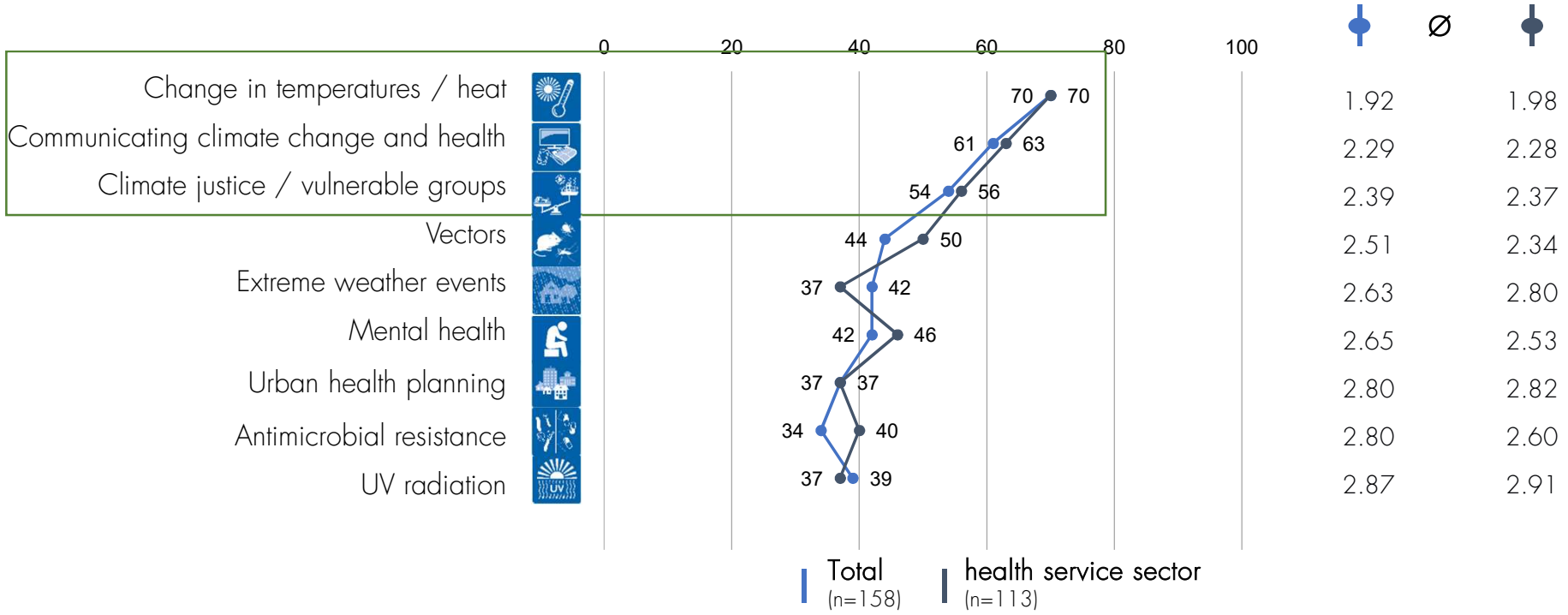


⌀	
1.82	1.77
1.88	1.84
2.04	2.02
2.04	1.98
2.16	2.06
2.22	2.11
2.30	2.26
2.35	2.39
2.85	2.83

n=159, answers given as percentages, sorted by mean value, depicted as Top 2 Box (useful/very useful)

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Which aspects are currently significant for your work?



n=158, answers given as percentages, sorted by mean value, depicted as Top 2 Box (important/very important)

What's next?

- Developing the network of authors and experts
- Developing and monitoring indicators regarding climate change, the environment and health
  - "RKI panel" –> new health survey from 2024
- Looking at other countries: Who is publishing similar reports and what can we learn from them?
  - e.g. CDC, UKHSA, RIVM, …

© UKHSA & RIVM

German status report on climate change and health

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

ROBERT KOCH INSTITUT

Thank you for your attention

- PIs: Hildegard Niemann, Thomas Ziese
- Contact us at *climatehealth@rki.de*
- www.rki.de/climatereport

German Status Report on Climate Change and Health (2023)

Climate change is posing an increasing risk for human health, including in Germany.

Access to robust and current information is essential for ensuring evidence-based policy and practice and identifying research gaps. For these purposes, more than 90 authors from about 30 national public authorities and institutions contributed to a comprehensive synthesis of the current evidence in Germany, published as 14 articles in the Journal of Health Monitoring.

The report is an extended and revised update of a similar report from 2010.

Part 1 - Impact of climate change on infectious diseases and antimicrobial resistance

- Journal of Health Monitoring S3/2023 (Complete Issue): Impact of climate change on infectious diseases and antimicrobial resistance - Part 1 of the German Status Report on Climate Change and Health 2023
  - Editorial
  - Climate change and public health - An introduction
  - Vector- and rodent-borne infectious diseases
  - Waterborne infections and intoxications
  - Foodborne infections and intoxications
  - Antimicrobial resistance and climate change

Part 2 - Impact of climate change on non-communicable diseases and mental health

- Journal of Health Monitoring S4/2023 (Complete Issue): Impact of climate change on non-communicable diseases and mental health - Part 2 of the German Status Report on Climate Change and Health 2023
  - Heat in Germany
    - Addendum: Personal injuries due to heat
  - Extreme weather events
  - UV radiation
  - Allergic diseases
  - Ambient air pollution
  - Mental health

Part 3 - Climate justice, communication, and options for action

- Journal of Health Monitoring S6/2023 (Complete Issue): Climate justice, communication, and options for action – Part 3 of the German Status Report on Climate Change and Health 2023
  - Climate justice
  - Communication
  - Options for action

An interdisciplinary advisory board of experts from numerous institutions and authorities supported the coordination of this report.

Additional outputs that are tailored for specific target groups are being developed together with the advisory board and the Federal Centre for Health Education (BZgA), and will be published below.

Additional outputs

The impact of climate change on health - a short video to accompany the first part of the status report, with a focus on infectious diseases and antimicrobial resistance.

What are the impacts of climate change on non-communicable diseases and mental health? This short video gives an overview to accompany the second part of the status report.

A short video introduces climate justice, target group-oriented communication, and options for action in the area of climate change and health.

Project information

Title of the project: Climate Change and Health - Report / update with advisory board: Content, communication and process

Project duration: 01.07.2021 until 30.06.2024

Project leads: Dr. Thomas Ziese, Dr. Hildegard Niemann (Unit 24)

Project staff: Dr. Kirsten Kelleher, Dr. Martin Mlinarić (Unit 24)

Project management agency: German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt, DLR)

Supported by:
Federal Ministry of Health

ORGANIZATION AND EXPERIENCES IN PLANNING AND IMPLEMENTING WORK RELATING TO CLIMATE CHANGE AND PUBLIC HEALTH IN INDIA AT THE NATIONAL CENTRE FOR DISEASE CONTROL (NCDC)

Dr. Aakash Shrivastava,
Additional Director and Head,
National Programme on
Climate Change and Human
Health,
India

IANPHI

ANNUAL MEETING

FEBRUARY 7-8, 2024 I KIGALI, RWANDA

HOSTED BY

rbc Rwanda Biomedical Centre

Healthy People, Wealthy Nation

Organization & experiences in planning & implementing work relating to climate change and public health in India at the National Centre for Disease Control

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

Vision

- Prime Minister's Council on Climate Change (2008)
- Mission on Health (2014)
- National Expert Group on Climate Change & Health (2015)
- National Programme on Climate Change and Human Health, NCDC, MoHFW (2019)

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

National Programme on Climate Change and Human Health

Goal: to reduce morbidity, mortality, injuries and health vulnerability to climate variability and extreme weather events

Key objectives

1. Promoting general awareness
2. Capacity building of health care workforce
3. Strengthen health sector preparedness
4. Collaborative partnership
5. Steering research & development

National Programme on Climate Change and Human Health

Key Objectives

1. Generating Awareness
- IEC Campaigns: routine, special days
- Sensitization workshops
- Health advisories: air pollution, heatwave, coldwave, floods

2 Capacity Building
- Training of health care professionals/workers
- Guidelines, training manuals

3 Strengthen Health Sector Preparedness
- Health Adaptation Plans-Climate Sensitive Disease/Issues
  Vulnerability assessment
  Enhanced Surveillance
- Health facility preparedness
- Green, Climate-Resilient measures
- Early Warning, Alert, Response System

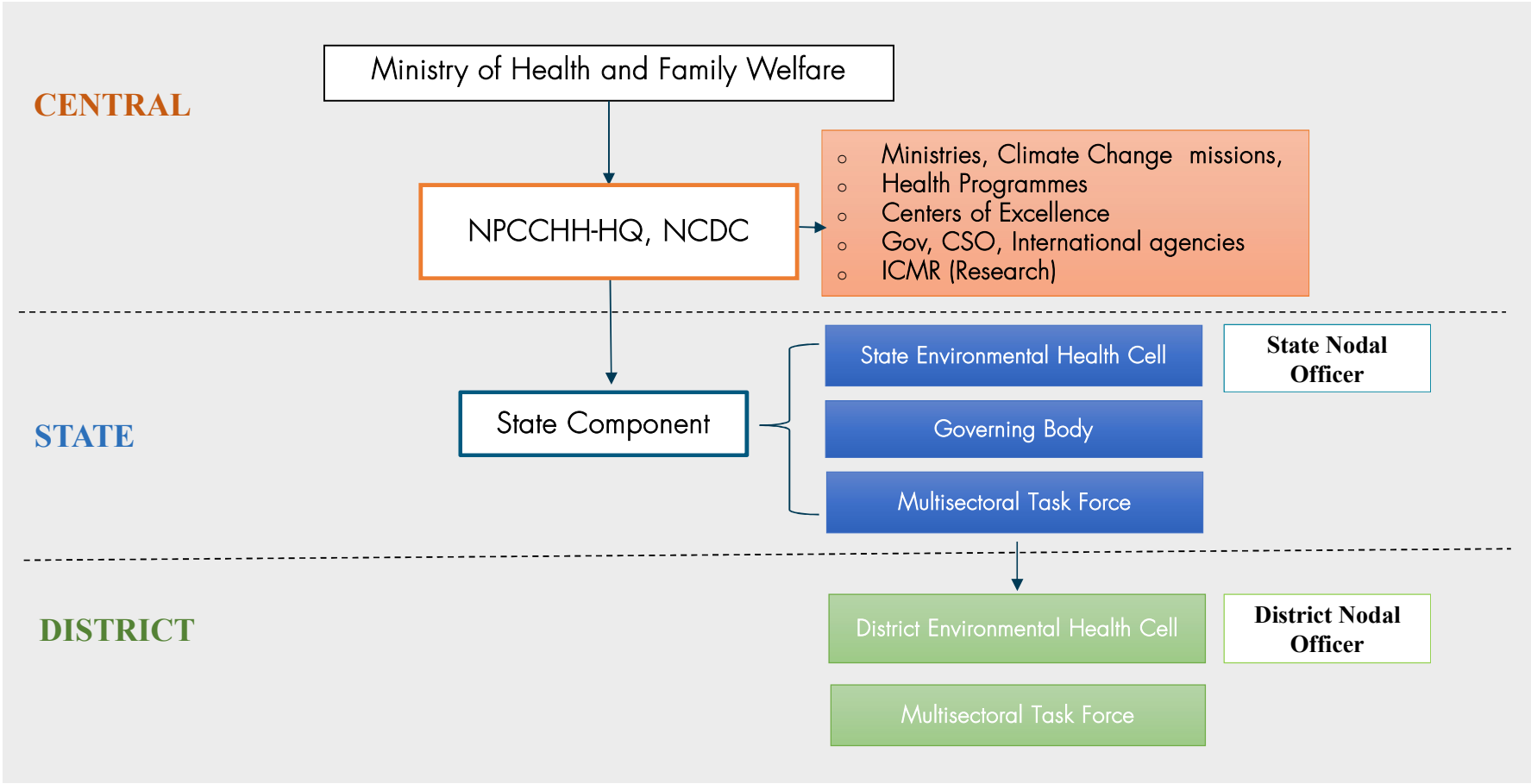
4 Collaborative Partnerships

Synergizing Inter-Ministerial efforts
- Steering Committee co-chaired by Secretaries MoHFW & MoEFCC
- IMD (MoES), NDMA (MoHA), JJM (MoJS)

Collaboration:
- Other missions, National prog
- Nat., Int. Organization (UN agencies)

5 Research & Development
- Steering research on Climate Sensitive Diseases- with ICMR

Organizational Framework



IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

Climate Sensitive Illnesses & Health Issues

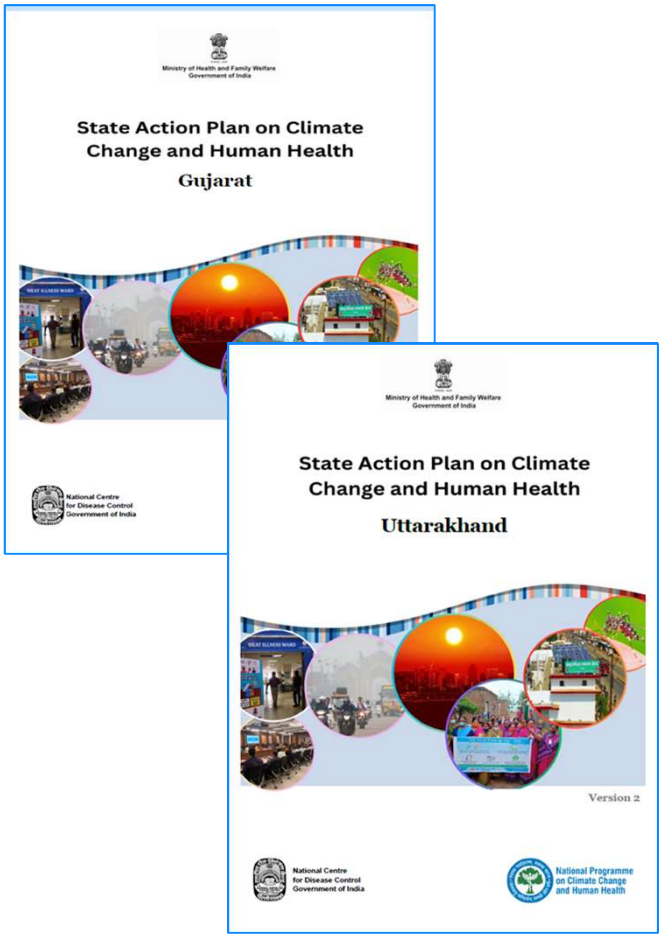
- Heat related Illnesses (HRI)
- Air pollution related illnesses
- Green and Climate resilient health infrastructures
- Extreme weather events
- Vector-borne diseases
- WASH/Water-borne diseases
- Vulnerability needs assessment
- Mental health
- Nutrition related diseases, Food security
- Allergic Diseases,
  Cardio-pulmonary diseases
- Occupational Health
- Zoonotic diseases
- Regional-specific Illnesses

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

Health Sector Adaptation

- Health Action Plans: State, District
- State, district task force: multi-sectoral engagement
- Integrated, digital environment-health surveillance
  - Nat. Outdoor Air and Disease Surveillance
  - Nat. Heat-Related Illnesses & Death Surveillance
- Health facility preparedness
  - Heatstroke rooms



IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

Health Sector Climate Mitigation

- Energy efficiency
- Energy transition: Solar power
- Rainwater harvesting
- National Hospital Energy Consumption Survey

Community Health Centre-Pallari, Chhattisgarh

Multi-sectoral Coordination

India Meteorological Department
- Meteorological data sharing, joint analyses

National Disaster Management Agency
- Review of heat preparedness

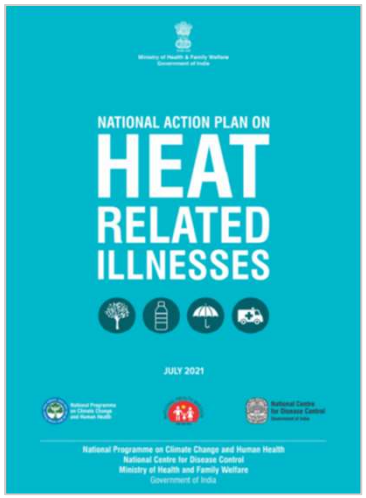
Central Pollution Control Board
- Air quality data sharing

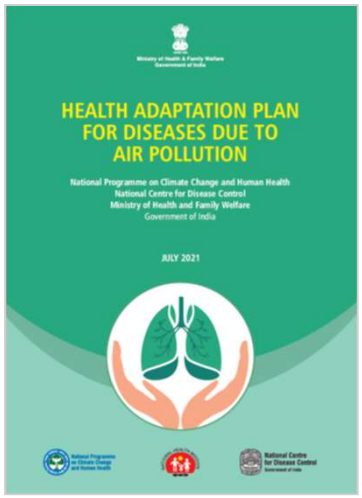
National Institute of Solar Energy
- Health facility solarization

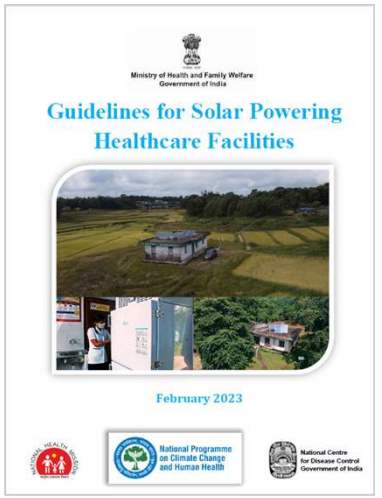
Ministry of Environment, Forest & Climate Change
- Joint committee

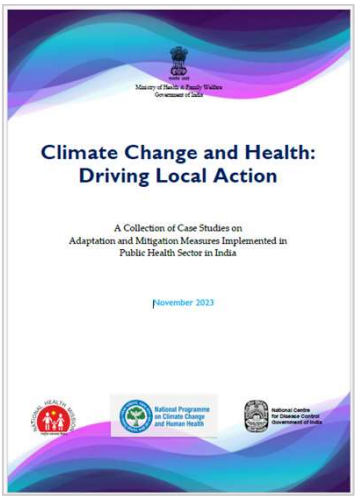
IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

Guidelines & Resources









Emerging Models

Health-Centric Response to Extreme Heat: Gujarat

Ahmedabad Heat Action Plan

- Temperature-mortality based early warning, action thresholds
- Multisectoral engagement

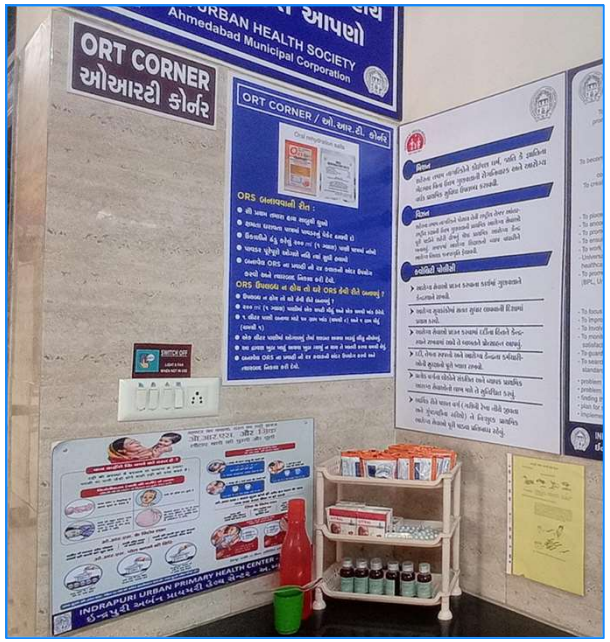
Health facility preparedness

- Heat-illness wards & ORS corners

Health surveillance

- Highest reporting coverage

Active community awareness and support measures



Oral Rehydration Therapy Corner, Urban Primary Health Centre-Vatva, Ahmedabad

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

Flood-resilient Health Facilities: Kerala

Climate vulnerability assessment-based retrofitting and rebuilding of health facilities

Structural measures

- Grill integrated compound wall
- High entrance, ramps, tiled walls
- Additional floor

Functional measures

- Multi-hazard health facility disaster preparedness & management plan
- Critical storage: Backup inverters, medical supply at
- top floor
- Shifting Provisions: records, drugs, equipments
- Early warning system

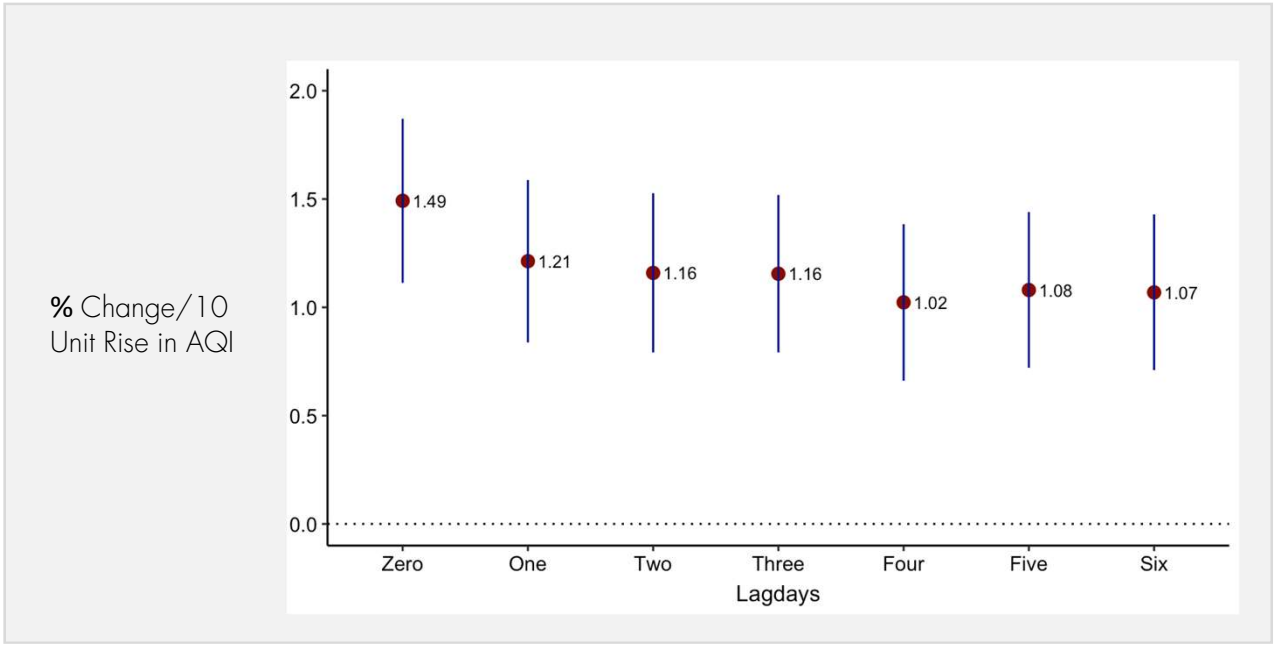
Family Health Centre-Pozhuthana, Wayanad, Kerala

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

National Outdoor Air & Disease Surveillance

Percentage Change in Acute Respiratory Emergencies Reported with Daily Air Quality Index, Delhi, 2018–2022



- Launched in Delhi in 2017
- Sentinel site: Government Tertiary care hospitals (6)
- Daily tracking
  - Acute respiratory emergencies, respiratory internation
  - Air quality index (Central Pollution Control Board)

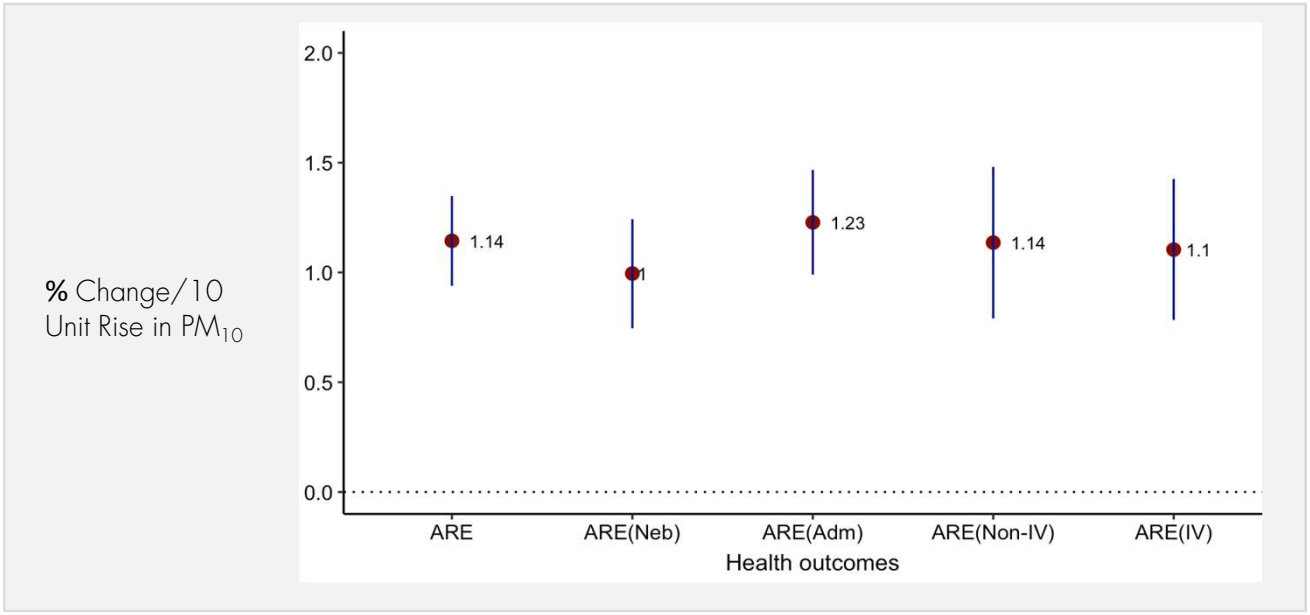
- With 10 unit rise in AQI, 1.5% rise in Acute Respiratory Emergencies on same day *(p <0.05)*

IANPHI
ANNUAL MEETING
February 7-8, 2024 | KIGALI, RWANDA

National Programme on Climate Change and Human Health

National Outdoor Air & Disease Surveillance

Percentage Increase in Acute Respiratory Outcomes with same day rise in PM10, Delhi, 2018-2022



ARE – Acute Respiratory Emergencies
ARE (Neb) – ARE requiring Nebulization
ARE (Adm) – ARE requiring Admission
ARE (Non-IV) – ARE requiring Non-Invasive Ventilation
ARE (IV) – ARE requiring Invasive Ventilation

With 10 unit rise in PM_{10},

> 1% increase in **all measured Acute Respiratory Health Outcomes** was observed on the same day *(p <0.05)*

Thank You!

CLOSING THOUGHTS AND REMARKS

Dr. Sébastien Denys
Director of the Environmental and Occupational Health Division, Santé publique France, and Chair of the IANPHI Thematic Committee on Climate Change and Public Health