Institute and Faculty of Actuaries

Working Party Research Topic/Title/Vision: -	Modelling Climate-Related Mortality and Morbidity Risks: From Climate Scenarios to Actuarial Assumptions. **Vision** To advance the assessment and modelling of climate-related mortality and morbidity risks in UK actuarial practice through evidence-based frameworks, worked examples for life, health and pensions actuaries. Building on the Working Party's published practitioner survey, the research will examine physical and transition pathways, competing health effects, adaptation, demographic and socioeconomic heterogeneity, and the translation of population-level outcomes into actuarial assumptions and portfolio-level implications.
Practice Area Research Committee Member Shadow:-	Sustainability Board - Stuart Gray
Source of idea/"Initiator":-	WP/Sustainability Board
Working Party Chair:-	Eric Dei Ofosu-hene
What issue is this research topic trying to address:-	1. Assess the materiality of physical and transition climate risks to mortality in the UK, including competing or offsetting effects, timing, adaptation and differences across population groups. 2. Evaluate scientific evidence, climate-health datasets and modelling methods, including their reliability, limitations and uncertainty. 3. Develop a coherent conceptual and methodological framework linking climate scenarios and health transmission pathways to mortality experience and actuarial assumptions. 4. Investigate how population-level effects translate to insured lives, health insurance portfolios and pension scheme populations, recognising selection, exposure, vulnerability and adaptive capacity. 5. Examine options for incorporating climate-related effects into existing projection and assumption-setting approaches, including the feasibility of CMI-compatible mortality adjustments. 6. Develop and validate illustrative worked examples and practical support for actuaries, including sensitivity analysis, scenario consistency and governance. 7. Identify research gaps and opportunities for cross-disciplinary collaboration and dissemination. 8. Potentially extend the analysis to morbidity.
Who will be the audience for this research:- *(We need to understand who we believe this research will be of interest to - to ensure we have an end consumer for the research)*	IFoA members across Life, Health and Pensions; insurers and reinsurers; pension scheme trustees, sponsors and advisers; the Continuous Mortality Investigation; academics and climate-health researchers; regulators, policymakers and other relevant stakeholders.
What do we see as being the output/deliverables of this research:-	A. Climate-health risk assessment: evidence review of material physical and transition pathways, competing effects, adaptation and implications for mortality. B. UK climate-health data assessment: sources, coverage, access, quality, limitations and suitability for actuarial analysis. C. Actuarial modelling framework and worked examples: climate-scenario-to-assumption translation, illustrative quantitative applications, portfolio considerations, uncertainty and validation. D. Practical actuarial support and future research priorities: materiality, data selection, modelling, assumptions, sensitivity testing, documentation, communication and governance. Output will be illustrative and subject to applicable IFoA review and approval processes.

	E. Communication and engagement: technical papers, practitioner briefings, blogs, presentations and stakeholder dialogue, as agreed.
How will this research be delivered?	A. Structured review of relevant actuarial, epidemiological, climate and policy evidence, informed by the practitioner survey. B. Assessment of UK climate, health and demographic datasets, including engagement with data providers where appropriate. C. Development of a transparent framework connecting physical and transition scenarios, exposure and health pathways, population characteristics, demographic outcomes and actuarial assumptions. D. Selection and implementation of feasible worked examples, with explicit baseline assumptions, scenario specifications, competing effects, uncertainty, sensitivity analysis and validation. Model and data choices will follow an assessment of suitability rather than be prescribed in advance. E. Consultation with practitioners, CMI and relevant experts on feasibility, interpretation and practical support. F. Peer review, documentation, Working Party approval and IFoA-supported dissemination as appropriate.
What are the timescales of this research: -	Indicative programme, subject to capacity, data access and approval: A–B: Evidence and data assessments, months 1–6. C (framework): Conceptual and methodological development, months 4–9. C (worked examples): Implementation and validation, months 7–15. D: Draft output, review and consultation, months 12–18. E: Publications and dissemination, throughout; principal outputs targeted by months 16–24. Milestones and dependencies to be reviewed periodically by the Working Party and Sustainability Board.
What previous work has been done in this area recently, within the profession please email libraries@actuaries.org.uk, other professions/academia:-	The Working Party's practitioner survey, "Modelling climate-related mortality and morbidity risks in the UK: insights from a practitioner survey" (Ofosu-Hene et al.), was published online in the British Actuarial Journal by Cambridge University Press on 14 July 2026. It provides the evidence base for this next phase. Relevant IFoA work includes climate-related risk alerts and practical guides for life and defined benefit pensions actuaries, previous Life Research Climate Change Working Party work and Longevity Bulletin no. 17. Additional academic, scientific and professional evidence will be reviewed.
Will 3rd party data be used? If so a protocol will be developed to support you	Yes. The Working Party may use public, aggregated or appropriately licensed third-party climate, health, mortality and morbidity datasets for evidence reviews and worked examples.
Proposed membership:- *The IFoA is registered as a Data Controller in terms of the Data Protection Act 1998. The contact details provided (i.e. names and email addresses) will be shared among the members of this working party, the Practice Area Research Committee and the relevant Practice Area Board in relation to the research topic detailed above. The information provided will be used for the purposes of facilitating the completion of the proposed research. The IFoA will not pass your personal information to any other third party without your consent. If you would prefer that your details are not shared in this way, please contact a member of the Practice Executive (practice.executive@actuaries.org.uk)*	Jonathan Harris, Richard Morris, Chris Tavener, Lisanne Horvat-Gitsel, Hande Love, Will Stobbs and Eric Dei Ofosu-Hene.
Additional volunteers required:-	Applications and collaboration are welcomed from Life, Health and Pensions practitioners and individuals with expertise in mortality, morbidity and longevity modelling, climate science,

	climate scenario analysis, sustainability, statistics, epidemiology, data science and assumption-setting. Volunteers should be willing to contribute actively to agreed research tasks, technical reviews and outputs. External collaboration is encouraged, subject to appropriate governance and practical arrangements.
Frequency and type of meeting:-	At least once in a month (Usually the last Friday of the month).
Engagement with external stakeholders - Public Affairs will support and arrange for you	Potential engagement, subject to agreement and availability: CMI, IAIS, ONS, UKHSA, the Met Office, relevant insurers, reinsurers, pension practitioners, academic climate-health researchers and appropriate regulatory or policy stakeholders. Inclusion does not imply an existing partnership or endorsement. IFoA Public Affairs / Engagement support to be requested as appropriate.
IFoA resource and support required:- *The Practice Executive and Research and Knowledge teams can offer various levels of support during the life of your working party; however, we would ask that a member of your working party be responsible for keeping minutes or action points from each of your meetings.* *It is important that the working party provides updates to the **Practices Manager on an on-going basis**, preferably after every meeting. This will ensure that the Board and other committees are kept informed of the work of the working party.*	Support requested from the Sustainability Board, Practice Executive, Research and Knowledge teams and Engagement / Public Affairs as appropriate.