

Commemorating the 1923 Great Kanto Earthquake: Current collaboration on disaster risk reduction between the UK and Japan

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Introduction

The year 2023 serves as the 100th memorial of the 1923 Great Kanto Earthquake in Japan (Fig.1). This earthquake occurred at 11:58 am on Saturday, 2 September, 1923. The magnitude 7.9 earthquake generated landslides and tsunamis and caused more than 100,000 deaths in the Kanto region. This large number of deaths was primarily caused by fire. The earthquake occurred around lunch time when people were cooking meals and large fires broke out. A strong typhoon brought high winds to Tokyo Bay, which caused the fires to greatly spread. The earthquake also damaged the water distribution system throughout the city, which caused the fires to ultimately last for approximately two days. September 1 has been designated by the Japanese government as a disaster prevention day since 1960 to increase disaster awareness by organizing events related to disaster risk reduction, including disaster education and disaster evacuation drills. In the UK, the 1666 Great Fire of London (Fig. 2) serves as a remarkable example of a large disaster. The fire started in a bakery shortly after midnight on Sunday, 2 September, spread rapidly and lasted until Thursday, 6 September. Similar to the 1923 Great Kanto Earthquake,

several factors, such as hot, dry weather, houses built primarily with wood, the high population density and strong wind, caused the fire to spread very quickly but with fewer casualties reported by this event, as it appears that most of the population of London was able to escape in time. There were some fire prevention-related regulations implemented for the rebuilt houses, such as external walls being made of brick, widened streets and new rules to prevent fires from starting. However, these rules only applied to the City of London. Therefore, serious fires continued to occur throughout the rest of London until firefighting techniques greatly improved in the 1700s. The Great Fire of London led to the creation of one of the world's first property fire insurance policies, with the first domestic fire insurance company starting in 1680. Approximately 10% of houses in London were insured by 1690 (Museum of London, 2023). Japan's first insurance company, Tokio Marine, was established in 1879 to take on the challenge of providing safety and security globally. During the Great Kanto Earthquake, many buildings that were damaged held fire insurance but not earthquake coverage, and as a result, they were excluded from insurance claims. However, after a series of negotiations with individual insurance companies, a proposal to pay 10% of the insurance amount was accepted as a form of consolation and strengthened the public's trust in the insurance business (Tokio Marine Holdings, 2023). The 1923 Great Kanto Earthquake and the 1666 Great Fire of London had similar large disaster impacts on their capital cities. This report briefly explains

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Fig.1 : The 1923 Great Kanto Earthquake (Mainichi, The Osaka (September 15, 1923))



Fig.2 : Painting of the 1666 Great Fire of London by an unknown artist, dated 1666–1675
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the current situation of two disaster risk reduction-related research institutions in Japan (International Research Institute of Disaster Science, IRIDeS) and the UK (Institute for Risk and Disaster Reduction) to commemorate the 100th memorial of the 1923 Great Kanto Earthquake.

Institute for Risk and Disaster Reduction (IRDR), University College London (UCL)

The UK has fewer natural hazards (i.e., earthquakes, tsunamis and volcanic eruptions) compared to Japan, but fires, storms, floods, and heatwaves are examples of its common hazards. In addition, researchers are coming from all

around the world to work in the UK, covering a larger range of targeted hazards as well as study areas. IRDR was established in 2010 with a mission to lead research, knowledge exchange and teaching in risk and disaster reduction across UCL. IRDR is an interdisciplinary research institute focusing on disaster resilience, cascading crises, natural hazards, humanitarian crisis response, health in emergencies, conflict and migration, climate change adaptation, and gender responsive resilience to integrate education, research, innovation and enterprise for the long-term benefit of humanity. In 2021, IRDR launched a new undergraduate program, the Global Humanitarian Studies BSc. IRDR has international faculty members and international

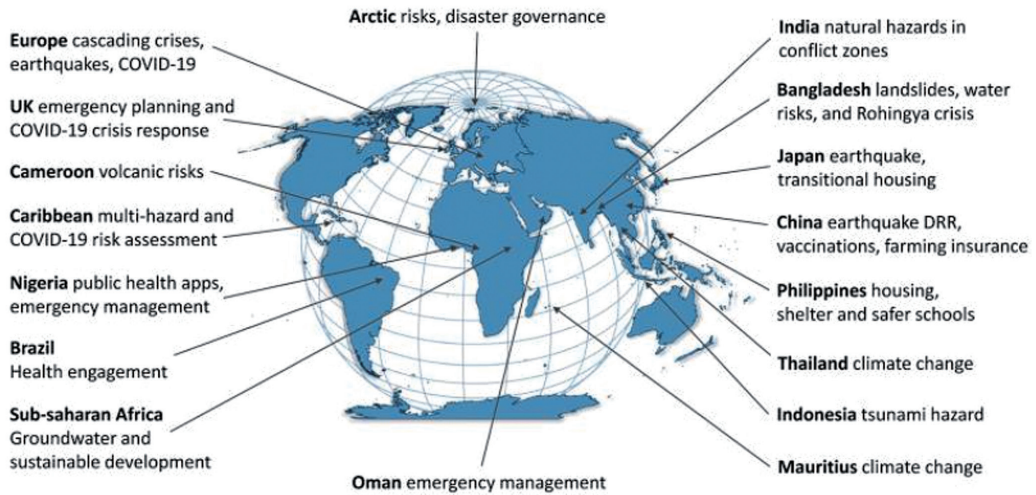


Fig.3 : Global research topics of IRDR (IRDR, 2023)

students, with their study areas covering most of the world (Fig. 3).

International Research Institute of Disaster Science (IRIDeS), Tohoku University

IRIDeS was established after the catastrophic 2011 Great East Japan Earthquake and tsunami. IRIDeS brings together the knowledge of Tohoku University and pursues the most advanced research on natural hazards, disaster and disaster risk reduction, aiming to contribute to on-going recovery and reconstruction efforts in disaster-affected areas and to be a world centre for disaster science in cooperation with research organizations from many countries. Based on the lessons learned from the 2011 Great East Japan earthquake and tsunami in Tohoku, IRIDeS has been making efforts to shift paradigms in disaster risk reduction to cope with catastrophic disasters caused by natural hazards. To this end, IRIDeS is performing practical research on disaster risk reduction that proposes solutions for disaster risk reduction and is contributing to sustainable and resilient societies both in Japan and overseas (Fig. 4). IRIDeS largely made international contributions, such as evolutions in knowledge

production policy and through Japanese practice (Yonezawa et al. 2019) and the Third UN World Conference on Disaster Risk Reduction, in which the Sendai Framework for Disaster Risk Reduction 2015–2030 was adopted.

Research and academic collaboration

The world's two leaders in disaster risk reduction in Europe and Asia have been collaborating since IRIDeS's establishment in 2012. Several joint research projects have been conducted on various topics, including seismology, earthquake engineering, tsunami engineering, disaster warning and recovery and joint field surveys in Japan (the 2011 Great East Japan Earthquake), the UK (the 1607 Bristol Flood) and the Philippines (the 2013 Haiyan Typhoon and Storm Surge). These research projects were financially supported by both internal funding from IRIDeS and UCL–TU Strategic Partner Funds and external funding from the Japan Society for the Promotion of Science (JSPS) and the National Research Institute for Earth Science and Disaster Resilience (NIED). In fact, 2023 is also the 10th anniversary of the university level MOU for both research intuitions. For this, the TU/ UCL Collaborative Research and Education Centre

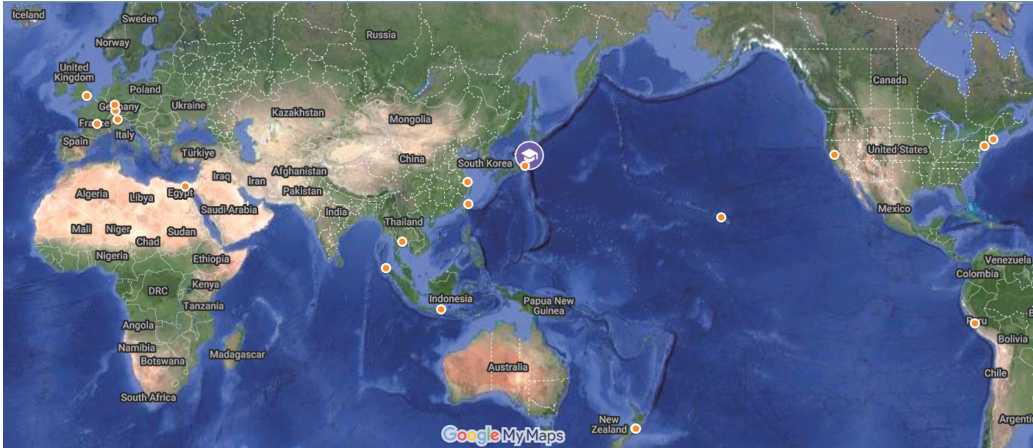


Fig 4 : Global collaboration of IRIDeS (IRIDeS, 2023)

for a Resilient Society was created to strengthen collaboration on resilience and disaster-related issues as well as promote student exchanges, including joint research supervision through the recently selected “Project to Strengthen the Global Capacity of Universities–Support for Inter–University Exchange with the Indo–Pacific Region–” from Japan’s Ministry of Education, Culture, Sports, Science and Technology’s from 2022.

Thus, a formal collaboration between UCL and IRIDeS was undertaken, fostering an interdisciplinary approach. Simultaneously, researchers from both institutions were actively engaging with one another and conducting collaborative research. There are several notable instances of informal research collaboration with UCL. One prominent collaboration involves Professor David Alexander from UCL. Professor Alexander, with 40 years of research experience in disaster research, travelled to Japan following the Great East Japan Earthquake and conducted site visits to the affected areas, including Fukushima Prefecture. Subsequently, he has consistently returned to these disaster-stricken areas. During his fieldwork in these afflicted regions, IRIDeS has actively accompanied him. Their excursions and insights into Japan’s disaster

response have been disseminated through joint international journals and other reputable sources, particularly during COVID-19. Additionally, their extensive and ongoing visits to the areas impacted by the Great East Japan Earthquake and Tsunami have yielded valuable perspectives on the recovery process. Joint ambitious collaborations on projects such as “Memory of Disaster” and “New Energy and Disaster Risk Management in Fukushima” are underway. IRIDeS is presently translating Professor Alexander’s seminal work, “How to Write a Disaster Management,” into Japanese. These collaborative efforts are firmly grounded in the relationship that Professor Alexander and IRIDeS have cultivated over many years.

Another notable collaboration is established with the UCL Centre for Gender and Disaster. The inception of this partnership coincided with the establishment of the centre itself. Within disaster and gender research, a relatively underexplored domain in Japan, the UCL Centre for Gender and Disaster, especially Associate Professor Punam Yadav, is collaborating with IRIDeS, for whom Dr. Miwako Kitamura is taking the lead, on several novel research projects, such as looking at the difficulties of disaster-vulnerable people (i.e., elderly people, women, LGBTQ+) during major

disasters as a joint project with the National Research Institute for Earth Science and Disaster Resilience (NIED), UCL–Tohoku partnership projects, and cosupervision of MSc students. The World Bosai Forum (WBF) in 2023 featured a dedicated session on diversity, equity, and inclusion (DEI), which was coordinated by both UCL and IRIDeS, cochaired by Dr. Kitamura and Dr. Yadav with strong support from Associate Professor Anawat Suppasri. The panel members included Professor Peter Sammonds, Professor Maureen Fordham, Dr. Punam Yadav, and Dr. Miwako Kitamura with consecutive opening and closing remarks by Tohoku University's executive vice president and vice president. The highlight of this session was a presentation from students on their observations of tsunami-affected areas in the Tohoku region. Students from SOAS, Cambridge, Washington University and UCL presented the findings of their fieldwork during this panel. There have been several other collaborations with the UCL IRDR since then, one of which is a project related to earthquake and tsunami early warning, and this collaboration is becoming stronger.

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