

CHAIR'S STATEMENT ON EXTREME WEATHER PREDICTION, PREPAREDNESS, AND RESPONSE

The world has experienced record-breaking wildfires and other extreme weather events, such as floods, hurricanes, droughts and heat waves, across every continent over the past decade, often overwhelming available national resources and requiring governments to request assistance from other countries. These increasingly frequent, lengthy, severe and costly extreme weather events are threatening peoples' lives, their well-being and our economies, as well as infrastructure, supply chains, healthcare and food systems, and further destroying nature and altering ecosystem services globally. Extreme weather events do not discriminate based on economic status or borders, and their impacts are growing significantly including in communities that lack sufficient capacity to predict, prepare and respond.

Efforts to better understand and quantify risks associated with extreme weather events can support preventive decision-making and proactive actions that are grounded in scientific research and local knowledge, bolster community preparedness, and mitigate losses. However, the scale, complexity, and lack of predictability of extreme weather continues to pose a challenge for such efforts.

Under Canada's 2025 Presidency, G7 members discussed this issue through a series of technical-level workshops on: *Extreme Weather Prediction and Preparedness Technologies, including Artificial Intelligence (AI) and Satellite Earth Observation (SEO)*; *Understanding Community Risks and Building Resilience, including through Nature-based Solutions (NBS)*; and *Promoting Inclusive Approaches to Extreme Weather Prediction, Preparedness and Response*.

Through these discussions, experts highlighted the rising risks, impacts, and human and economic costs of the increasing frequency of extreme weather events. Experts underscored the importance of emergency preparedness, prevention and response while addressing climate change, biodiversity loss and ecosystem degradation.

Members participating in the workshops discussed global cooperation to predict, prepare for, and respond to extreme weather events by taking integrated action to reduce the incidence and negative impacts of extreme weather at source and build resilient economies.

It was further discussed that rapidly evolving technologies such as AI and SEO are changing the pace of weather prediction, preparedness, and response. These technologies, which are complementary to traditional modelling, have the potential to generate more timely and accurate forecasts at lower computing cost which offers increasing opportunities for those who traditionally have lesser capacities to run their own prediction models, enabling improved early warning systems and disaster risk management. At the same time, it is important to address challenges, including the rapid obsolescence of machinery and systems, capacity development challenges, maintaining public trust in data interpretation and use, and a lack of common baselines, amongst others.

Discussions also highlighted how conventional and ageing infrastructure assets are often ill-equipped to withstand the increasing toll of extreme weather events. Implementing integrated adaptation approaches against extreme weather events, such as NBS and resilient infrastructure, can reduce

their human, financial and environmental impacts while also presenting economic opportunities and creating jobs, improving the health and safety of communities, supporting mitigation and adaptation actions, conserving and restoring nature, and combatting pollution.

G7 members also highlighted initiatives they are already undertaking to predict, prepare for and respond to extreme weather, both domestically and internationally (See Annex A).

In light of these discussions, and our commitments under the *Kananaskis Wildfire Charter*, and recognizing the devastating toll that these natural hazards can have on people, the economy and the environment, the G7 Presidency emphasizes that it is essential to facilitate early warning systems for all, and that public and private actors at all levels must be better equipped to prevent, predict, prepare for, and build resilience to extreme weather events. As such, it is important to:

1. Continue raising awareness of the different causes of extreme weather events and work together on measures to prevent them;
2. Implement mitigation and adaptation actions, grounded in scientific research and local knowledge, that reduce the risk of extreme weather.
3. Boost global cooperation to predict, prepare for, and respond to extreme weather events.
4. Exchange lessons learned and best practices from national and international efforts, as well collaborate with all partners and stakeholders, and collaborate to better assess and quantify the environmental, social and economic risks posed by extreme weather;
5. Explore opportunities, benefits, and challenges of further using emerging technologies for extreme weather prediction, preparedness, and response;
6. Work together, and with relevant partners, to monitor and assess benefits provided by NBS; and
7. Identify and implement, as appropriate, prevention, prediction, preparedness and response measures to extreme weather, including early warning systems and disaster risk management, that take into account as relevant populations that are disproportionately affected, including Small Island Developing States (SIDS), Least Developed Countries (LDCs), Indigenous Peoples, persons with disabilities, women, youth and local communities.

We further encourage future G7 Presidencies to continue discussions and collective efforts on this important topic.

