AI Sub-Group of the Early Warnings for All (EW4All) Initiative

Terms of Reference and Strategic Plan

1. Introduction

Extreme weather events, natural hazards, and other emergencies present growing challenges globally. The Early Warnings for All (EW4All) initiative, aims to ensure that every person on earth is protected by an early warning system by 2027. The EW4All initiative is built on four pillars to deliver effective and inclusive multi-hazard early warning systems: 1) disaster risk and knowledge management led by UNDRR; 2) detection, observation, monitoring, analysis and forecasting led by WMO; 3) warning dissemination and communication led by ITU; and 4) preparedness and response capabilities led by IFRC. Digital technologies, particularly Artificial Intelligence (AI) offer transformative possibilities in environmental monitoring, information analysis, early warning dissemination, and emergency response preparedness to support implementation across all four pillars. AI Sub-Group of the EW4All initiative was established to **explore, implement, and scale AI applications** that support the EW4All initiative.

Country pilots are the key deliverable of the initiative. A country pilot leverages an AI technology to solve a real-world problem (with respect to early warning as defined by the EW4All initiative) in a country. This strategic plan guides the efforts of the AI Sub-Group, focusing on **implementing practical AI-driven solutions for early warning systems, addressing real-world needs through country pilots**, and coordinating matchmaking between gaps and solutions. This plan will be reviewed and adapted as needed throughout the EW4All initiative and shared within the AI Sub-Group for additional inputs.

2. Objectives

The EW4All AI Sub-Group's **primary role will be to identify real-world needs and match them with appropriate solutions, ensuring that efforts are implemented effectively**. The EW4All AI Sub-Group has the following objectives:

1. **Support the four EW4All pillars and ensure cross-pillar collaboration**: Identify AI solutions for specific use cases that address real country needs that support the four pillars of the EW4All initiative, in particular that are cross-pillar.
    - Pillar 1: Risk Knowledge
    - Pillar 2: Detection, Observation, Monitoring, Analysis, and Forecasting of Hazards
    - Pillar 3: Warning Dissemination and Communication
    - Pillar 4: Preparedness and Response Capabilities
2. **Cultivate partnerships and matchmaking**: Engage with stakeholders across the private and public sectors to identify AI applications that can be leveraged within the EW4All initiative. Prioritise matchmaking between identified gaps, AI solutions and membership interests and capacities.
3. **Country pilots**: Pilot AI applications in selected countries to demonstrate practical implementation and impact with the aim of scaling up.
4. **Develop resources and tools:** Catalogue: Compile AI solutions at various stages of maturity, categorized by EW4All pillars, with a searchable online database. Toolkit: Develop a solutions

toolkit including AI tools, models, applications, and resources for countries. These resources would be hosted on the ITU AI Sub-Group of EW4All webpage and linked through the EW4All initiative website.

5. **Capacity building and awareness**: Develop and deliver training sessions to showcase how AI can enhance the effectiveness of early warning systems.

6. **Fundraising and resource mobilization**: Secure funding to support AI application pilots in countries and the overall work of the EW4All AI Sub-Group.

3. Governance and coordination

- The overall governance and coordination will be provided by the representatives of the Interpillar Technical Coordination Group (ITCG) with support from the respective Pillar organisations and leads.
- **EW4All AI Sub-Group membership:** To become a member of the group, there must be clear links to early warning systems and AI which will be checked by the respective Pillar organisations and leads. New members are introduced and asked to present their work relevant to the group during a bi-weekly/monthly meeting to showcase what they offer and how they would like to support. All members will be requested to fill in a survey (to be developed) to take stock of their relevant projects, resources available, skills, data and technology capabilities which would be useful to the group and match making activities.
- **Membership engagement:** Hold bi-weekly/monthly multi-stakeholder meetings to coordinate work, present working group updates and introduce new members. Used as a convening platform for sharing lessons learned, case studies, and best practices among countries and partners. Pilot working groups to report back to the main group on a regular basis to ensure not working in silos and to foster cross-working group learning. Used as a planning and coordination space related to events and group member engagement at them.
- **Centralised membership coordination:** The Pillar leads/AI focal points to oversee and manage the various AI solutions being developed and piloted across the four pillars in the pilot working groups. Ensure alignment between all partners and working groups to create synergies among pillars and to avoid duplicating efforts and ensure resources are used effectively.

4. Key activities

Planning and organisation

- **Strategic plan**: Finalise a detailed plan for the EW4All AI Sub-Group, including roles, responsibilities, and timelines.
- **Gap analysis:** Conduct a gap analysis and continuously review across the four pillars to identify critical areas where AI can make the most impact in the EW4All initiative. Implement a prioritization framework to ensure that the most critical and scalable AI solutions are focused on first, addressing the gaps that align most closely with the overall goals of EW4All.
- **Fundraising**: Develop a fundraising plan and identify opportunities that can help scale the pilot work.
- **Partnerships initiation**: Identify and engage with new stakeholders, including from the private sector.
- **Matchmaking facilitation:** Act as a matchmaker by linking problem statements and gaps identified to establish pilot projects with relevant AI solution providers. Create a centralized form where members can register ongoing projects, current needs, and available solutions.

This will allow the EW4All AI Sub-Group to manage partnerships more efficiently and strategically.
- **Country selection for pilots**: Select countries for pilot programs with focus on those countries engaged in the EW4All initiative.

Country piloting and capacity building

- **Country pilot working groups:** Aim to facilitate the identification, development, and implementation of AI-powered EWS processes across various countries. These working groups are responsible for identifying pilots and suitable countries as use cases, ensuring that they are tailored to local contexts and that relevant stakeholders are engaged. The working groups should establish monitoring frameworks to track progress and impact while ensuring that efforts align with overarching goals of the EW4All AI Sub-Group. Coordination and communication with the main EW4All AI Sub-Group are critical to prevent siloed work and working group leads will be expected to regularly communicate updates to the wider bi-weekly meetings. This enables continuous coordination, knowledge sharing, and cross-pilot learning. Additionally, the learnings from each pilot will contribute to improving and scaling up AI-powered EWS initiatives in other regions, fostering global collaboration in disaster risk reduction and enhancing the effectiveness of early warning systems. If the pilots are successful, the working group will take steps to understand how to scale the solution, approach, and fundamental technologies based on these learnings.
- **Capacity building**: Develop and launch training sessions for governments and other relevant national stakeholders on AI usage in early warning systems. Equip governments, NGOs, and local communities with the knowledge and skills to leverage AI for early warning systems. Host in-person and virtual workshops tailored to the needs of different stakeholders. Develop an e-learning course covering the fundamentals of AI and its application in disaster risk management.

Project development and up-scaling

- **Evaluate pilots**: Assess the impact and outcomes of the pilot programs, and identify opportunities for scaling up successful initiatives. Develop a strategy for scaling up successful pilots, turning them into projects, and integrating AI solutions across additional countries and regions.
- **Expand partnerships**: Engage additional partners to support scaling efforts and resource mobilisation.

5. Role of EW4All AI Sub-Group members

- The **interpillar technical coordination group (ITCG)** will be responsible for the overall governance of the AI for EW4All group.
- **EW4All Pillar lead agencies (UNDRR, WMO, ITU, IFRC):** ITU will support with the overall coordination of the EW4All AI Sub-Group, including with the support of a consultant. The interpillar technical coordination group representatives will provide strategic guidance, facilitate country engagement, and support the integration of AI within existing frameworks of the EW4All initiative.
- **Other International Organisations:** Contribute to existing working groups or establish working groups, ensure cross-agency collaboration, especially through existing AI initiatives related to early warning systems such as the Global Initiative.
- **Private sector:** Contribute technological expertise, tools, and resources; support pilot projects and help in scaling successful AI solutions in selected countries.

- **Local governments and national agencies**: Implement pilots, provide national data, engage in capacity-building activities and incorporate AI solutions into national early warning systems. Where relevant, ensure solution link**s** to appropriate policies.
- **NGOs and civil society**: Support community engagement, capacity building, and use of AI in early warnings systems.
- **Academic and research institutions**: Offer research support, peer review of AI solutions, and contribute to piloting in countries.

6. Country buy-in and integrating national data

- **AI readiness assessment**: Conduct assessments in pilot countries to determine their readiness for AI deployment in relation to the EW4All initiative, leveraging ITU data on digital transformation and existing readiness work through AI for Good and other UN agencies.
- **National data integration**: Collaborate with national agencies to integrate AI-driven insights and solutions into existing early warning systems, ensuring relevance and effectiveness.
- **National adoption of AI solutions**: Customise AI tools to address country-specific challenges, leveraging local data and expertise. Ensure countries can use the solution, including via training if necessary. Ensure AI solutions are adapted to local contexts by integrating national and sub-national data.

7. Outcome

The EW4All AI Sub-Group will have successfully integrated **AI-powered solutions** into multi-hazard early warning systems across a wide range of countries, ensuring **improved understanding, detection, communication, anticipation, preparedness and response** capabilities. Through a combination of strategic **matchmaking, partnerships**, and pilot projects, the Sub-Group will have demonstrated **scalable and sustainable AI applications** across the EW4All value chain.

These efforts will result in:

- Enhanced global disaster resilience by improving the relevance, accuracy and timeliness of early warnings.
- Broader stakeholder engagement with strengthened public-private partnerships, ensuring AI solutions are tailored to local needs and can be implemented within national frameworks.
- The creation of a comprehensive toolkit and resource base for countries to implement AI in early warning systems, increasing capacity-building efforts and stakeholder empowerment.