SEEDS partners with Microsoft India to launch Phase II of Sunny Lives: An Artificial Intelligence Model for Disaster Risk Prediction

- *A model solution developed under the Microsoft AI for Humanitarian Action program to build disaster resilient communities in India.*
- *The solution uses high resolution satellite imagery, artificial intelligence coding and dwelling assessments building assessments to predict disaster impact.*
- *Phase I: Successfully piloted predictive risk modelling for cyclones and floods in disaster prone coastal areas in India.*
- *Phase II begins with model development for heatwave risks in urban Core Heatwave Zones (CHZ).*
- *SEEDS will support 125,000 at risk people with pre-emptive disaster warnings in 2021.*
- *A scalable model designed to generate predictive multi-hazard risk analysis set to include earthquakes, storms, forest fires, and biological disasters in the future.*

New Delhi, 26 July, 2021: SEEDS (Sustainable Environment and Ecological Development Society) in partnership, with Microsoft, has developed an Artificial Intelligence model by leveraging technology to build disaster resilience among at-risk communities in India. The project has been executed in collaboration with technology partner Gramener and supported under Microsoft's global program 'Artificial Intelligence for Humanitarian Action'. As part of this initiative, SEEDS, with support from Microsoft's data science team, built a solution that generates hyper-local risk information to be used for early warnings for impending disasters. The model leverages high-resolution satellite imagery that is interpreted by the system for identifying the most vulnerable houses to recommend immediate and long-term actions to reduce risk. The solution has capabilities to generate targeted advisories to protect vulnerable communities, their valuables, avoid immediate losses, and provide pre-emptive refuge to the people. It is built to aid governments, disaster response authorities and frontline aid organisations to plan risk-averse strategies against worsening climate emergencies and disasters.

Phase I: SEEDS piloted the AI inundation model to generate cyclone-induced flood risk assessment in coastal cities of India. In 2020, the model was launched and tested live during Cyclone Nivar in Tamil Nadu and Burevi in Kerala, achieving high impact assessment accuracy. More than 90% of houses damaged by the cyclone were detected as houses at high or very high risk. By incorporating attributes unique to each community, such as building materials and topography, SEEDS has created more accurate community-specific models to predict vulnerability to natural disasters, allowing communities to be better prepared and develop custom response plans.

Intensifying climate change is increasing heatwave vulnerabilities in Core Heatwave Zones (CHZ) across India and globally, with an expected rise in the coming decades. However, the perception of risk related to heatwaves remains very low, it is largely considered as an outdoor phenomenon with no emphasis on risk advisory dissemination by the disaster response authorities. SEEDS utilizing the predictive analytics capabilities of the solution, scaled the model to generate heat waves advisories in 2021, supporting 50,000 at-risk families residing in Delhi and Nagpur by sharing pre-emptive heatwave warnings recommending cost-effective interventions.

Manju Dhasmana, Director Corporate Affairs – CSR/Philanthropies, Microsoft India said, *"Disasters disrupt lives at scale - cloud technology aids development of solutions to protect communities against such disasters at scale. Often, when disaster strikes, they shake the very ecosystem that exists to aid against them. Our partnership with SEEDS is one such effort to bring the power of technologies like cloud and AI to alleviate the damage by marshalling relief resources more efficiently and effectively.*

It can accelerate the delivery of aid and sharpen the decisions of relief workers on the front lines. This year, more than 7.5 million people in Odisha were affected by Cyclone 'Yaas'. SEEDS reached out to 1100 families in Penthakata, Puri with the highest flood susceptibility, to disseminate risk advisory generated through the Sunny Lives model, ensuring timely evacuation from the vulnerable areas and provide refuge at safer places."

Dr Anshu Sharma, Co-Founder SEEDS said, *"Drawing on the concept of tech for good, this initiative aims at hyper-local disaster warnings and advisories to the most marginalised and vulnerable sections of society as a significant step for building a just and safe world. In the summer of 2021, though heatwaves events have been short, heat stress is impacted many, as families in lockdown due to Covid-19 are stuck at home in harsh conditions. Slum dwellers have no place to go to, when the indoor temperature of tin roofed houses on a summer day can be well above 50 degrees Celsius, up to ten degrees higher than the city's high. We are reaching out to over 1.25 lakh individuals under this pilot and will subsequently make the technology available for much wider use by local authorities and communities. We are thankful to Microsoft for this collaboration, where technology and a local understanding of risk are coming together for making India safer."*

The AI flood risk prediction model is being deployed at select geographies in Odisha and Maharashtra, to combat challenges of the ongoing monsoon cycle. This intervention continues to change the way communities use disaster-related information to make decisions and necessary action – to avoid loss of assets and lives. Information about their inherent vulnerabilities is made available in a localized linguistic context. Disaster alerts and warnings are developed in formats that communicate exactly what is expected in their current location and immediate actions to be followed. SEEDS aims to scale the solution to protect at-risk populations from earthquakes, storms, forest fires, and biological disasters across the Indian sub-continent.

SEEDS, a winner of Government of India's Subhash Chandra Bose Aapda Prabandhan Puraskar 2021, is an organisation that builds the resilience of people exposed to disasters through practical solutions for disaster readiness, response, and rehabilitation. Microsoft's Artificial Intelligence for Humanitarian Response supports resiliency, response, and recovery programs designed for those affected by humanitarian emergencies. Gramener, a data science consulting and AI company, is the technology partner for this initiative.

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For further information please contact:
Name: Meghna Chawla
Designation: Chief Communication Officer
Organisation: SEEDS
Phone: +919811795747
Email: meghna@seedsindia.org

About SEEDS:
SEEDS (Sustainable Environment and Ecological Development Society) is a not-for-profit organisation that enables community resilience through practical solutions in the areas of disaster readiness, response, and rehabilitation. Since 1994, the organization has worked extensively on every major disaster in the Indian subcontinent – grafting innovative technology on to traditional wisdom. It has reached out to families affected by disasters and climate stresses; strengthened and rebuilt schools and homes; and has invariably put its faith in skill-building, planning and communications to foster long-term resilience. SEEDS is also India's first agency to be verified on the parameters of the global Core Humanitarian Standards (CHS) – an international certification system for quality and accountability in humanitarian response. SEEDS has been awarded with the most prestigious annual

Subhash Chandra Bose Aapda Prabandhan Puraskar 2021 by the Government of India, acknowledging the invaluable contribution and selfless service rendered by individuals and organisations in India in the field of Disaster Management. SEEDS completed 27 years of outstanding service to humanity in January 2021 and is re-anchoring its approach to building resilience through innovation. It continues to empower the most vulnerable across Asia to build a better future. For more information, visit www.seedsindia.org

About Microsoft India:
Microsoft (Nasdaq "MSFT" @microsoft) enables digital transformation for the era of an intelligent cloud and an intelligent edge. Its mission is to empower every person and every organization on the planet to achieve more. Microsoft set up its India operations in 1990. Today, Microsoft entities in India have over 13,000 employees, engaged in sales and marketing, research, development and customer services and support, across 11 Indian cities – Ahmedabad, Bengaluru, Chennai, New Delhi, Gurugram, Noida, Hyderabad, Kochi, Kolkata, Mumbai, and Pune. Microsoft offers its global cloud services from local data centers to accelerate digital transformation across Indian start-ups, businesses, and government organizations.