ITUTech

AI for Natural Disaster Management

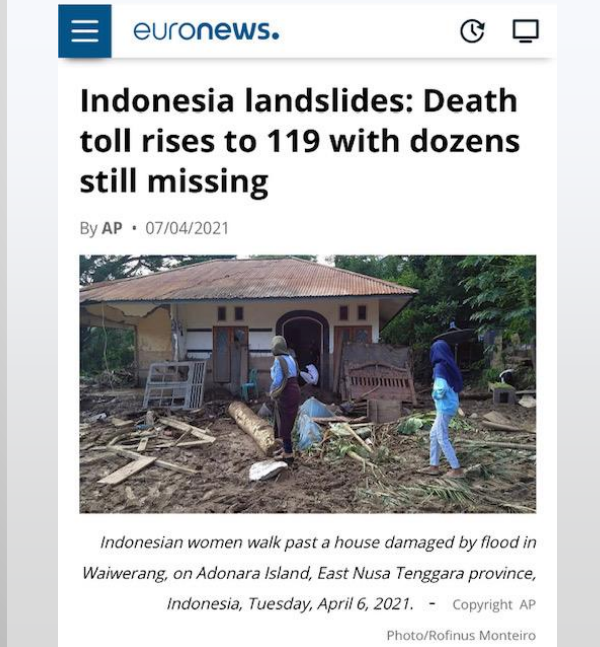
ITU Focus Group

Monique Kuglitsch
Fraunhofer HHI

The challenge

Natural disasters are damaging physical events caused by natural hazards.

The situation is exacerbated in **certain regions** and for certain **populations;** and is expected to **worsen**.


euronews.

Indonesia landslides: Death toll rises to 119 with dozens still missing

By **AP** • 07/04/2021

Indonesian women walk past a house damaged by flood in Waiwerang, on Adonara Island, East Nusa Tenggara province, Indonesia, Tuesday, April 6, 2021. - Copyright AP Photo/Rofinus Monteiro


LA STAMPA

La siccità taglia del 15% il raccolto del grano

Le stime di produzione all'inizio della trebbiatura e Coldiretti chiede l'intervento del governo per contenere il caro energia

maurizio tropeano

13 Giugno 2022 alle 16:42 | 1 minuti di lettura


SWR» AKTUELL

SWR» / SWR Aktuell / Rheinland-Pfalz / Koblenz

BILDUNGSMINISTERIN HUBIG IM KATASTROPHENGEBIET

Mehr als 30 Schulen beschädigt - Suche nach Alternativen

iStock-964362096

The challenge

Natural disasters feature prominently in the activities of multiple **UN organizations** and **programmes** including:

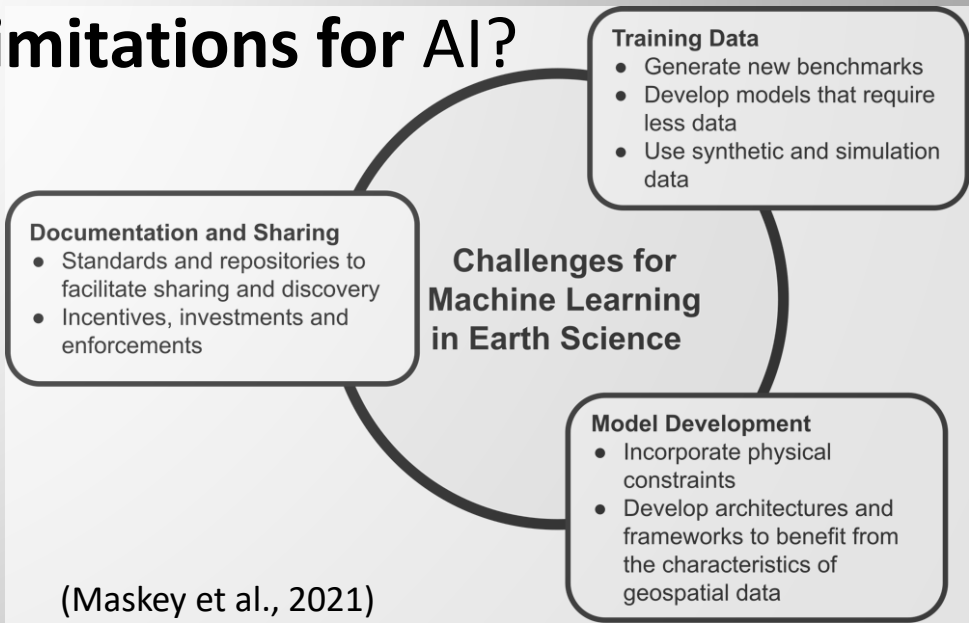
- policy-guiding publications
- SDGs
- WMO Bulletin Vol 71(1): Early Warning and Anticipatory Action

iStock-964362096

The questions

Through tapping the **potential of AI**, can we improve our **understanding** of natural hazards, our ability to **detect** events in real-time, our ability to **forecast** events, and our ability to effectively **communicate** an impending or ongoing disaster?

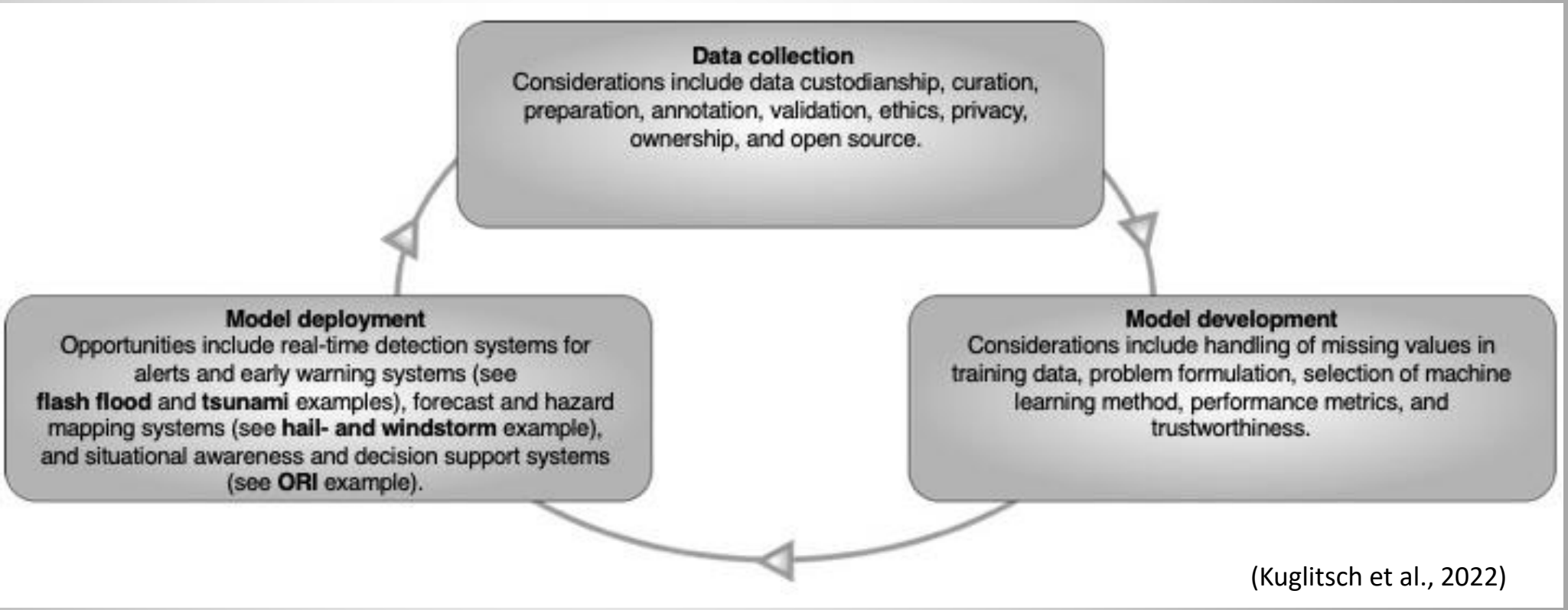
What are the **best practices** and **limitations for** AI?



(Maskey et al., 2021)

The goal

Explore best practices across the AI lifecycle



(Kuglitsch et al., 2022)

Data

Some questions to explore are:

- what **requirements** should data meet when being used to train or test an AI-based algorithm?
- can AI-based algorithms be used to **enhance** data quantity and quality?

Model development

Some questions to explore are:

- what is the current **gold standard** method to detect or forecast events? How can AI-based algorithms bring these methods to the **next level**?
- what should be considered when **training** and **evaluating** an AI-based algorithm?

Model deployment

Some questions to explore are:

- once an event has been forecast or triggered, how can AI assist with the **immediate response**?
- how do we ensure that communication methods are **reliable and trusted** by the population? Are they accompanied by a clear set of **protocols** to ensure that individuals know how to respond?

Key deliverables

- **Workshops**
- **Roadmap**
- **Glossary**
- Three non-normative **technical reports**
- **Educational materials**

What is a Focus Group?

- Supports the efforts of an associated **ITU Study Group**.
- Provides a working environment for **pre-standardization or standardization** activities.
- Can be rapidly established and has freedom to choose working methods, leadership, financing, and desired outputs.

FG-AI4NDM

ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management (**FG-AI4NDM**) converges the ICT expertise of ITU with natural disaster expertise from the WMO and UNEP.

Creates an atmosphere that is conducive to international, multi-stakeholder, and interdisciplinary collaboration.

ITU

UN environment programme

FG-AI4NDM

Management Team

ITU TSB Secretariat

WG-Roadmap | WG-EduMat | WG-Data | WG-Modelling | WG-Comms | WS-Glossary | WS-Tools

- TG-AI for Flood Monitoring and Detection
- TG-AI for Geodetic Enhancements to Tsunami Monitoring and Detection
- TG-AI for Insect Plague Monitoring and Detection
- TG-AI for Landslide Monitoring and Detection
- TG-AI for Snow Avalanche Monitoring and Detection
- TG-AI for Wildfire Monitoring and Detection
- TG-AI for Vector-borne Disease Forecasting
- TG-AI for Volcanic Eruption Forecasting
- TG-AI for Hail and Windstorm Hazard Mapping
- TG-AI for Multihazard Communication Technologies
- TG-AI for Earthquake Monitoring, Detection, and Forecasting

Use cases

FG-AI4NDM

Management Team

Chair
Monique Kuglitsch
Fraunhofer HHI, Germany

Vice Chair
Elena Xoplaki
University of Giessen, Germany

Vice Chair
Juerg Luterbacher
WMO

Vice Chair
Muralee Thummarukudy
UNCCD

Vice Chair
Srinivas Chaganti
DOT, India

Vice Chair
Rakiya Babamaji
NASRDA, AfSTAG-DRR, & UNDRR-GRAF, Nigeria

Vice Chair
Yan Chuan Wang
China Telecom, China

Get involved!

Visit our website (https://itu.int/go/fgai4ndm)

Peruse our **onboarding document** for guidance on how to:

- Create a free **ITU user account**
- Join our low-volume **mailing list**
- **Register** for our workshops/meetings:
  - Save the date (24-26 October in Athens, Greece)
- Use our remote participation platform (**MyMeetings**)
- Access our **collaboration site**
- Submit written **contributions**

©LaoMa/Shutterstock