HUMANITARIAN PRINCIPLES AND ETHICAL CONSIDERATIONS OF THE USE OF ARTIFICIAL INTELLIGENCE IN HUMANITARIAN ACTION

OBJECTIVES

- To enhance participants' understanding of the current landscape of AI deployment in humanitarian settings, specifically in Africa.
- To critically examine the ethical implications of AI in humanitarian action, drawing upon fundamental humanitarian principles.
- To analyze the existing regulatory frameworks governing AI in humanitarian action, assessing their applicability and limitations in the African context.

BACKGROUND

While there is no universally accepted definition of Artificial Intelligence (AI), the term is often used to describe a machine or system that performs tasks that would ordinarily require human (or other biological) brainpower to accomplish.[1] By processing vast amounts of data, AI systems based on machine learning (ML) methods can learn from existing data in order to recognize patterns and make predictions from new data.[2] For this briefing paper and the working session, AI is defined as "any system, tool or technology that involves the use of computer systems to carry out tasks that would ordinarily require human cognition, planning or reasoning."[3]

The development of AI has advanced at breakneck speed over the past years. This "AI hype" has led to an unprecedented uptake in AI systems worldwide. Africa has gradually embraced AI as a tool for economic growth, innovation, and problem-solving across diverse sectors. Although the African AI industry is still nascent due to the high cost of building data infrastructure, limited internet access, and a lack of funding,[4] the African Union (AU) reports that over 2,400 start-ups are currently engaged in AI development on the continent.[5] Faced with rising humanitarian needs and large funding deficits, the humanitarian sector has increasingly recognized AI as a way to "achieve more with less"

[1] Sarah W. Spencer, "Humanitarian AI The hype, the hope and the future", Humanitarian Practice Network, Network Paper, no. 85, November 2021, available at: https://odihpn.org/wp-content/uploads/2021/11/HPN-Network-Paper_AI_web_181121.pdf

[2] Ana Beduschi, "Harnessing the potential of artificial intelligence for humanitarian action: Opportunities and risks", International Review of the Red Cross (2022), 104 (919), 1149–1169, available at: https://international-review.icrc.org/sites/default/files/reviews-pdf/2022-06/harnessing-the-potential-of-artificial-intelligence-for-humanitarian-action-919.pdf

[3] ML is defined as "systems that use large amounts of data to develop their functioning and 'learn' from experience. The term 'AI' used hereafter refers to both AI and ML systems.

[4] Abdullahi Tsanni, "Africa's push to regulate AI starts now", MIT Technology Review, 15 March 2024, available at: https://www.technologyreview.com/2024/03/15/1089844/africa-ai-artificial-intelligence-regulation-au-policy/

[5] Emmanuel Ochayi, "Nigeria Ranks Second in Top 10 African Countries With The Most AI Firms", Prime Business Africa, October 2024, available at: https://www.primebusiness.africa/top-10-african-countries-with-the-most-ai-firms-as-nigeria-ranks-second-with-over-400/

by boosting both operational efficiency and humanitarian response.[6] In Africa, several humanitarian organizations are increasingly embracing the use of AI in their work, recognizing the potential benefit of AI in areas like disaster prediction, resource allocation, and service delivery – while being faced with new risks and ethical challenges of aligning this opaque technology with humanitarian principles.[7]

In light of the increased uptake of AI in humanitarian action in Africa and beyond, as well as the significant risks introduced by this technology when deployed in humanitarian contexts, it is vital to discuss how humanitarian organizations can benefit from AI while mitigating its risks. This briefing paper aims to set the stage for this discussion by outlining various ways in which AI is being utilized in humanitarian action, focusing on examples from Africa, critically examining the risks and ethical implications of using these technologies in humanitarian settings, and providing a brief overview of regulatory and governance efforts.

THE ROLE OF AI IN HUMANITARIAN ACTION

For humanitarian actors, deploying AI holds the promise of increasing both organizational and operational efficiency at a time when humanitarian needs are growing, and resources are decreasing. From an operational standpoint, AI has the potential to improve the efficiency and cost-effectiveness of routine, labor-intensive tasks, such as report drafting, manual data formatting, the calculation of metrics, and the creation of communications materials.[8] For instance, the World Food Programme (WFP), has developed and deployed an AI-based "Optical Character Recognition system" called Meza, designed to help digitize handwritten nutrition records from remote health clinics – speeding up data collection and analysis and extending the reach of their program to include data from the deep field. Meza was tested from 2018 to 2020 across several clinics in the Republic of Congo.[9] The United Nations High Commissioner for Refugees (UNHCR) developed and tested a generative AI-based tool to transcribe and analyze hundreds of hours of audio recordings from community focus groups in El Salvador with the goal of better understanding the local community and providing more effective assistance.[10]

Beyond such operational efficiencies, the humanitarian sector has also started to recognize AI as having the potential to impact humanitarian operational response significantly. One such category of AI-driven operational tools is chatbots,[11] which humanitarian and civil society organizations have been exploring to automate personalized engagement and to improve the dissemination of information to affected populations.[12] For instance, the Norwegian Refugee Council in collaboration with NetHope, the University College Dublin, and Microsoft, have developed a chatbot to help young refugees in Lebanon find high-quality education options in places where there are

[6] Rebecca L. Root, "How the World Food Programme is using AI", Devex, 13 December 2023, available at: https://www.devex.com/news/how-the-world-food-programme-is-using-ai-106664

[7] Leila Toplic, "AI in the Humanitarian Sector", Reliefweb, 8 October 2020, available at: https://reliefweb.int/report/world/ai-humanitarian-sector

[8] OCHA Centre for Humanitarian Data, *Briefing Note on Artificial Intelligence and the Humanitarian Sector*, April 2024, available at: https://www.unocha.org/publications/report/world/briefing-note-artificial-intelligence-and-humanitarian-sector

[9] WFP Innovation Accelerator, *Meza: Digitising paper record for smart phones*, World Food Programme, 27 July 2023, available at: https://innovation.wfp.org/project/meza

[10] UNHCR Innovation Service, "Innovating with generative AI to better understand community needs", Medium, 4 November 2024, available at: https://medium.com/unhcr-innovation-service/innovating-with-generative-ai-to-better-understand-community-needs-7f09b55ba804

[11] These chatbots can range from relatively simple algorithms following a predefined script to more sophisticated solutions using natural language processing (NLP) based on large language models (LLM).

[12] International Federation of Red Cross and Red Crescent Societies, *Chatbots in Humanitarian Contexts: Learning from Practitioner Experiences*, 2023, available at: https://communityengagementhub.org/wp-content/uploads/sites/2/2023/06/20230623_CEA_Chatbots.pdf

no schools or universities.[13] Another potential operational benefit of AI for humanitarian action is to enable analysis at a previously unattainable scale. This has the potential to support a shift towards proactive, data-driven approaches in the humanitarian sector[14] and advance the ambition to achieve a humanitarian sector that is "as anticipatory as possible, and only as reactive as necessary."[15]

For instance, the Danish Refugee Council is using an AI-based foresight model using open-source data to predict forced displacement in places like Nigeria, Colombia, Burkina Faso, Myanmar, DR Congo, and Sudan one to three years into the future.[16] The International Rescue Committee is using AI in a number of areas and projects such as to optimize service delivery for refugees, for predictive modeling of conflicts and crises, and to create individualized learning experienced for children affected by crisis.[17] UNHCR's Project Jetson, developed in 2017, provides AI-based predictions on the movements of displaced people from Somalia a month in advance, drawing on a range of datasets to "discover, understand, and measure the specific factors that cause, indicate or exacerbate the forced displacement of Somalis." After the first year of deployment, predictions were accurate for eleven of the country's eighteen regions and significantly improved the efficiency and effectiveness of UNHCR's services.[18]

The WFP's Innovation Accelerator has been working on several AI projects to help the WFP's humanitarian mandate. For instance, the WFP's HungerMap LIVE is an AI-based hunger monitoring platform that tracks and predicts food security in near real-time on a global scale.[19] In another example, the WFP developed an open-source tool called SKAI, which uses AI and satellite imagery to automatically assess building damage on a large scale. It has since been used to accurately assess damaged buildings and enable proactive and swift response measures in the Durban region floods (SA) in 2022, in the Pakistan floods of 2022, Hurricane Ian in Florida (USA) in 2022, and the Türkiye Earthquake of 2023.[20]

RISKS AND HARM OF AI

Despite the considerable list of examples of how the humanitarian sector is leveraging AI to improve operational efficiency and effectiveness, there needs to be more awareness of the risk posed by the development, deployment, and use of these technologies. While a myriad of potential risks and harms caused and exacerbated by the deployment and use of AI exist, this paper will briefly lay out three that are primarily related to the technical

[13] Esat Dedezade, "Ai-powered chatbot will help educate refugee youths", Microsoft Stories Europe, 17 August 2018, available at: https://news.microsoft.com/europe/2018/10/17/ai-powered-chatbot-will-help-educate-refugee-youths/

[14] OCHA Centre for Humanitarian Data, *Briefing Note on Artificial Intelligence and the Humanitarian Sector*, April 2024, available at: https://www.unocha.org/publications/report/world/briefing-note-artificial-intelligence-and-humanitarian-sector

[15] OCHA, "Co-chairs' statement," OCHA Anticipatory Action Event 2021, 10 September 2021, available at: https://reliefweb.int/report/world/anticipatory-action-event-2021-high-level-humanitarian-event-anticipatory-action

[16] Danish Refugee Council, *Global Displacement Forecast 2024*, March 2024, available at: https://pro.drc.ngo/resources/documents/global-displacement-forecast/

[17] Leila Toplic, "AI in the Humanitarian Sector", Reliefweb, 8 October 2020, available at: https://reliefweb.int/report/world/ai-humanitarian-sector

[18] UNCHR Innovation Service, "Is it possible to predict forced displacement?", Medium, 13 May 2029, available at: https://medium.com/unhcr-innovation-service/is-it-possible-to-predict-forced-displacement-58960afe0ba1

[19] WFP Innovation Accelerator, *HungerMap LIVE: Tracking hunger in near real-time*, World Food Programme, 15 October 2024, available at: https://innovation.wfp.org/project/hungermap-live

[20] WFP Innovation Accelerator, *SKAI: Unleashing the power of artificial intelligence (AI) to revolutionize disaster response and humanitarian aid*, World Food Programme, 21 October 2024, available at: https://innovation.wfp.org/project/SKAI

design of the model: bias and discrimination, data protection and privacy, and the issue of transparency.[21]

BIAS AND DISCRIMINATION

A significant risk is that AI systems, trained on historical and live data, can perpetuate and amplify existing biases and discrimination. AI models are trained on large data set, which themselves are not neutral and often reflect historical inequalities and political decisions that inadvertently make their way into the final AI algorithm.[22] Beyond data bias, biases can also emerge from how a problem is framed, [23] what type of algorithm is chosen, how an AI solution is designed, and how it is tested.[24] In humanitarian settings, such biases in AI applications in areas like predictive crisis analysis, resource allocation, or vulnerability assessments could inadvertently lead to unequal access to aid, marginalize certain groups, or reproduce existing patterns of injustice.[25]

For humanitarian organizations operating in Africa, this heightened humanitarian consequence of AI biases is compounded with the increased risk of biases in the African context. Firstly, due to the historical training data, AI systems have a persistently high failure rate when identifying faces of color, especially the faces of Black women,[26] and recognizing non-Western English dialects.[27] Second, African countries only contribute a tiny portion of the data used to train AI models, which makes Africa a "shadow area" in AI tools primarily developed in Western countries.[28] However, as noted by OCHA, biases within the data are not the only concern. The volume of data that AI systems require risks exacerbating current humanitarian data disparities, in which data-rich contexts receive a greater share of attention simply because information is less scarce. This could lead to the further isolation of contexts that are already marginalized. [29]

Mitigating these AI biases in a diverse humanitarian context will require a holistic view of how this system will operate in the target environment and how it will affect people's lives, with a strong focus on those in vulnerable positions.[30] Mitigation measures such as increased diversity and inclusion in the development and deployment of AI, bias

[21] For the purposes of brevity, this section selectively focuses on the risks primarily related to the technical design of the model. However, there are additional risks that humanitarians should consider when using AI. More details: Sarah W. Spencer, "Humanitarian AI revisited: Seizing the potential and sidestepping the pitfalls", Humanitarian Practice Network, Network Paper, no. 89, May 2024, available at: https://odihpn.org/wp-content/uploads/2024/05/HPN_Network-Paper89_humanitarianAI.pdf

[22] Kate Crawford & Trevor Paglen, "Excavating AI: the politics of images in machine learning training sets", AI & Society, vol. 36, pp. 1105-1116, 2021, available at: https://excavating.ai/

[23] Sarah W. Spencer, "Humanitarian AI: The hype, the hope and future", Humanitarian Practice Network, Network Paper, no. 85, November 2021, available at: https://odihpn.org/wp-content/uploads/2021/11/HPN-Network-Paper_AI_web_181121.pdf

[24] Ramya Srinivasan and Ajay Chander, "Biases in AI Systems", Communications of the ACM, vol. 64, no. 8, pp. 44-49, August 2021, available at: https://dl.acm.org/doi/pdf/10.1145/3464903

[25] Sarah W. Spencer, "Humanitarian AI: The hype, the hope and future", Humanitarian Practice Network, Network Paper, no. 85, November 2021, available at: https://odihpn.org/wp-content/uploads/2021/11/HPN-Network-Paper_AI_web_181121.pdf

[26] Nada Hassanin, "Law professor explores racial bias implications in facial recognition technology", University of Calgary News, 23 August 2023, available at: https://ucalgary.ca/news/law-professor-explores-racial-bias-implications-facial-recognition-technology

[27] Valentin Hofmann et al., "AI generates covertly racist decisions about people based on their dialect", Nature, no. 633, pp. 147-154, 28 August 2024, available at: https://www.nature.com/articles/s41586-024-07856-5

[28] Daryna Antoniuk, "Lack of data makes AI more biased in African countries, says former tech official", Recorded Future News, 15 February 2024, available at: https://therecord.media/lack-of-data-makes-ai-more-biased-in-africa

[29] OCHA Centre for Humanitarian Data, *Briefing Note on Artificial Intelligence and the Humanitarian Sector*, April 2024, available at: https://www.unocha.org/publications/report/world/briefing-note-artificial-intelligence-and-humanitarian-sector

[30] Michael Pizzi, Mila Romanoff, Tim Engelhardt, "AI for humanitarian action: Human rights and ethics", International Review of the Red Cross, no. 913, March 2021, available at: https://international-review.icrc.org/articles/ai-humanitarian-action-human-rights-ethics-913

auditing frameworks of humanitarian AI,[31] capacity-building and knowledge sharing, and clear red lines for areas too sensitive for AI require further discussion, exploration, and effective implementation.

DATA PROTECTION AND PRIVACY VIOLATIONS

In addition to the data bias issues outlined above, several other concerns are related to data quality, data management, and data governance. The extensive data requirements of AI systems raise concerns about data protection and privacy, particularly for vulnerable populations in humanitarian settings.[32] These individuals may have limited control over their data, which, if mishandled, could lead to severe consequences, including targeting or social stigma. Informed consent is also challenging, as affected people may not fully understand the technology or their privacy rights, potentially undermining trust in humanitarian organizations. Additionally, data leaks or misuse pose significant risks in unstable environments, and the lack of robust data protection laws in many regions further complicates secure and ethical AI use.

To tackle these challenges, an increasing number of national and supranational data protection laws and frameworks have been put in place globally. For instance, the European Union (EU)'s General Data Protection Regulation (GDPR) is an often-cited forerunner in data protection laws that has inspired similar regulations worldwide. [33,34] Similarly, the African Union published the AU Data Policy Framework in 2022 as part of its Digital Transformation Strategy for Africa 2020-2030, aimed at creating a consolidated data governance system across the Union.[35] However, neither the GDPR, nor many of the new national data protection laws apply to all humanitarian actors in all contexts. [36] In the absence of a single, industry-wide authority that regulates the use and protection of humanitarian data, many humanitarian actors have developed internal data protection guidelines and policies, including the ICRC's Handbook on Data Protection in Humanitarian Action, [37] the Inter-Agency Standing Committee (IASC)'s Operational Guidance on Data Responsibility and Humanitarian Action, [38] and the OCHA's Data Responsibility Guidelines.[39]

BLACK-BOX AND TRANSPARENCY

The opaque nature of many AI systems, often referred to as "black box" models, poses a serious challenge to accountability and transparency. [40] AI models usually rely on

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[31] OCHA Centre for Humanitarian Data, *Peer Review Framework for Predictive Analysis in Humanitarian Response,* May 2021, available at: https://data.humdata.org/dataset/2048a947-5714-4220-905b-e662cbcd14c8/resource/76e488d9-b69d-41bd-927c-116d633bac7b/download/peer-review-framework-2020.pdf

[32] Sarah W. Spencer, "Humanitarian AI: The hype, the hope and future", Humanitarian Practice Network, Network Paper, no. 85, November 2021, available at: https://odihpn.org/wp-content/uploads/2021/11/HPN-Network-Paper_AI_web_181121.pdf

[33] Ana Beduschi, "Harnessing the potential of artificial intelligence for humanitarian action: Opportunities and risks", International Review of the Red Cross (2022), 104 (919), 1149–1169, available at: https://international-review.icrc.org/sites/default/files/reviews-pdf/2022-06/harnessing-the-potential-of-artificial-intelligence-for-humanitarian-action-919.pdf

[34] Regulation (EU) 2016/679 General Data Protection Regulation (GDPR), applicable as of 25 May 2018, available at: https://gdpr-info.eu/

[35] African Union, *AU Data Policy Framework*, February 2022, available at: https://au.int/sites/default/files/documents/42078-doc-AU-DATA-POLICY-FRAMEWORK-ENG1.pdf

[36] https://worldpopulationreview.com/country-rankings/gdpr-countries

[37] ICRC, *Handbook on Data Protection in Humanitarian Action*, 3rd edition, Cambridge University Press, November 2024, available at: https://www.cambridge.org/lu/universitypress/subjects/politics-international-relations/international-relations-and-international-organisations/handbook-data-protection-humanitarian-action-3rd-edition?format=PB

[38] IASC, *IASC Operational Guidance on Data Responsibility in Humanitarian Action*, Inter-Agency Standing Committee, 28 April 2023, available at: https://interagencystandingcommittee.org/operational-response/iasc-operational-guidance-data-responsibility-humanitarian-action

[39] OCHA, *Data Responsibility Guidelines*, October 2021, available at: https://centre.humdata.org/data-responsibility/

[40] Cynthia Rudin, "Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead", Nature Machine Intelligence, 1, 206-215, May 2019, available at: https://www.nature.com/articles/s42256-019-0048-x

complex algorithms that even their designers struggle to understand fully, making it difficult to determine their inner workings and assess how decisions – such as aid allocation or crisis prediction – are made.[41] This opacity makes it challenging to identify and address biases, errors, or unintended consequences that may arise from AI-driven decisions and makes it difficult to determine who is responsible for AI-driven errors. This lack of transparency is particularly worrisome for humanitarian organizations seeking to implement AI systems while adhering to the principles of neutrality, independence, and impartiality.[42] Without transparency, it is challenging to verify whether AI systems uphold neutrality, as hidden biases could cause the model to favor certain groups or regions and the increasingly dual-use nature of AI systems can lead to humanitarian actors inadvertently using military technology. Independence is also at risk when humanitarian organizations rely on opaque AI tools developed by third parties, potentially allowing external influences on decision-making processes or potentially becoming dependent on private tech companies and their AI systems for their work.

REGULATORY FRAMEWORKS

AI regulation and governance today encompasses a fragmented mix of formal regulation, ethical guidelines, and self-regulation frameworks, reflecting diverse approaches to managing the opportunities and risks AI presents. Formal regulatory efforts, such as the European Union's AI Act, are creating structured oversight based on risk levels, aiming to enforce transparency, accountability, and human rights protections. Several countries have either put in place AI legislation (e.g., China, UAE, U.S.) or published national strategies (e.g., Australia, Chile, Colombia, Egypt). Another approach to AI regulation is through standardization, with organizations such as the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), and the Institute of Electrical and Electronics Engineers (IEEE) each having published standards on AI. The Alan Turing Institute also hosts the AI Standards Hub which is helpful for stakeholders to navigate and participate in international AI standardization efforts. Finally, the most widespread approach to AI regulation is through ethical principles and guidelines, favored by many companies, governments, civil society, and humanitarian organizations.[43] Notable examples include the OECD's AI Principles and the UNESCO Recommendation on the Ethics of Artificial Intelligence.

Zooming in on Africa, the African Union (AU) has taken a leading role in establishing a continental strategy to regulate AI, while national-level initiatives have been slower to emerge. The AU published a Blueprint for AI in Africa in 2021, outlining ethical guidelines and governance recommendations for AI. Additionally, in 2024, the AU Development Agency (AUDA-NEPAD) released a Whitepaper and Roadmap for a continent-wide AI strategy.[44, 45] Most recently, in July 2024, the AU Executive Council endorsed the Continental AI Strategy designed to accelerate AI development and regulation, which awaits final approval in 2025.[46] However, as of November 2024, only nine African

[41] Sarah W. Spencer, "Humanitarian AI: The hype, the hope and future", Humanitarian Practice Network, Network Paper, no. 85, November 2021, available at: https://odihpn.org/wp-content/uploads/2021/11/HPN-Network-Paper_AI_web_181121.pdf

[42] AccessNow, *Mapping Humanitarian Tech: Exposing protection gaps in digital transformation programmes*, February 2024, available at: https://www.accessnow.org/wp-content/uploads/2024/02/Mapping-humanitarian-tech-February-2024.pdf

[43] Anna Jobin, Marcello Ienca, Effy Vayena, "The global landscape of AI ethics guidelines", Nature Machine Intelligence, 1, 389-399, 2 September 2019, available at: https://www.nature.com/articles/s42256-019-0088-2

[44] African Union Development Agency, *AUDA-NEPAD White Paper: Regulation and Responsible Adoption of AI in Africa Towards Achievement of AU Agenda 2063*, June 2023, available at: https://drive.google.com/file/d/1wYJDAfd1sC3QnehWeWqAALfaxDWiY0D1/view?pli=1

[45] African Union Development Agency, *AUDA-NEPAD Artificial Intelligence Roadmap for Africa: Contributing towards a continental AU strategy on AI*, February 2024, available at: https://drive.google.com/file/d/18DKNDwhOpl-tzmsWaF_6Yd91wlNVaHIA/view

[46] African Union, *Continental Artificial Intelligence Strategy*, August 2024, available at: https://au.int/en/documents/20240809/continental-artificial-intelligence-strategy

countries[47] have developed and ratified national AI strategies, underscoring the need for greater national-level implementation.[48] Overall, while continental initiatives provide a framework for responsible AI development in Africa, national-level implementation remains uneven. For humanitarian organizations working in this context and seeking to deploy AI in their humanitarian response, voluntary adherence to guiding principles and AI ethics as the ones outlined above remains crucial. Furthermore, a careful, holistic assessment of the need for AI is necessary, as well as investing in digital literacy among staff and internal AI expertise is essential to ensure AI is deployed responsibly.

GUIDING QUESTIONS

- As humanitarian organizations increase their operational reliance on AI, how can we ensure the humanitarian principles and humanitarian ethics remain at the center of AI adoption and across all stages of the AI lifecycle, from model development to deployment to testing and evaluation?
- What specific recommendations should be considered to address the risks associated with using AI in humanitarian action, particularly regarding the procurement of models and the use of data, and obtaining consent for the use of and participation in the design of AI solutions from those impacted by model outputs?
- Which AI solutions or use cases are considered "no-go" areas, and which are deemed less risky? Are there any established red lines for humanitarian organizations in their use of AI, or are all use cases considered possible?

ADDITIONAL MATERIAL

- Abdullahi Tsanni, "Africa's push to regulate AI starts now", MIT Technology Review, 15 March 2024, available at: https://www.technologyreview.com/2024/03/15/1089844/africa-ai-artificial-intelligence-regulation-au-policy/
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[47] Mauritius, Rwanda, Ethiopia, Benin, Algeria, Egypt, Ghana, Nigeria, and Senegal

[48] Melody Musoni, "Envisioning Africa's AI governance landscape in 2024", ecdpm, Briefing note no. 177, January 2024, available at: https://ecdpm.org/application/files/7017/0651/8711/Envisioning-Africas-AI-Governance-Landscape-in-2024-ECDPM-Briefing-Note-177-2024.pdf